

SCHOOL LIBRARIANS' READINESS FOR  
INFORMATION LITERACY IMPLEMENTATION  
IN SECONDARY SCHOOLS

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## **ABSTRACT**

The literature suggests that information literacy education is embedded and integrated in the Malaysian Integrated Primary (1982), the Secondary School Curriculum and the Curriculum Standard for Primary School (2012-2015). However, there is no concrete empirical research to confirm or deny the implementation of information literacy in the school curriculum. This study focuses on the implementation of information literacy education (ILE) in Malaysian secondary schools and the role of the school librarian. The main aims of the study were to determine the readiness of the school librarians towards the implementation of information literacy in schools and identify factors that influence information literacy implementation in Malaysian school librarians. This is a quantitative research, using descriptive research design and survey research technique with two distinct data collection techniques; a semi structured interview and a survey involving 710 school librarians in Malaysia. School librarian readiness is defined as their preparedness to implement IL and it is derived as the cognitive, functional and technical readiness of school librarians in IL implementation. Findings reveal that school librarians' professional qualifications have an impact on their cognitive, functional and technical readiness. However, their experience as a school librarian has a significant impact on technical readiness only. The study established four organizational factors influencing the implementation of ILE, mainly Professional Development, Teaching and Learning Strategies, Information Literacy Policies & Standards and Infrastructure. The researcher proposes an IL Implementation framework that emphasizes two main contributors to the successful implementation of ILE in Malaysian schools: School Librarians' Readiness and the Organizational Factors.

# **KESEDIAAN GURU PERPUSTAKAAN DAN MEDIA DALAM IMPLEMENTASI LITERASI MAKLUMAT DI SEKOLAH MENENGAH**

## **ABSTRAK**

Pendidikan literasi maklumat dimaklumkan terkandung dalam Kurikulum Baharu Sekolah Rendah dan Sekolah Menengah (1982) dan Kurikulum Standard Sekolah Rendah (2013-2015), akan tetapi tidak ada bukti yang utuh untuk menunjukkan penggunaan literasi maklumat dilaksanakan di sekolah. Kajian lepas tertumpu kepada kaedah penerapan pendidikan literasi maklumat dalam pengajaran dan pembelajaran. Objektif kajian ini adalah untuk mengkaji kesediaan Guru Perpustakaan dan Media dalam menggunakan literasi maklumat serta faktor-faktor yang mempengaruhi implementasi literasi maklumat. Kajian ini menggunakan analisis kuantitatif dengan dua cara pengumpulan data, iaitu temubual dan kaji selidik yang melibatkan seramai 710 orang Guru Perpustakaan dan Media di sekolah-sekolah menengah di Malaysia. Kesediaan Guru Perpustakaan dan Media didefinisikan sebagai kesediaan mereka dalam implementasi literasi maklumat yang berpunca daripada kesediaan kognitif, kefungsian dan teknikal dalam implementasi literasi maklumat. Kelayakan profesional mereka memberi impak ke atas kesediaan kognitif, kefungsian dan teknikal. Pengalaman Guru Perpustakaan dan Media hanya memberikan impak ke atas aspek kesediaan teknikal sahaja. Empat faktor pengurusan yang mempengaruhi implementasi pendidikan literasi maklumat, iaitu Peningkatan Profesional, Strategi Pengajaran dan Pembelajaran, Dasar Literasi Maklumat dan Piawaian dan Infrastruktur. Suatu rangka kerja implementasi literasi maklumat melibatkan Kesediaan Guru Perpustakaan dan Media serta Faktor Organisasi adalah dicadangkan bagi memastikan keberkesanan pendidikan literasi maklumat.



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## **LIST OF ABBREATIONS**

CDC	Curriculum Development Centre
ETD	Education Technology Division
EPRD	Education Planning and Research Development Division
IL	Information Literacy
ILE	Information Literacy Education
MoE	Ministry of Education
SETD	State Education Technology Department
TAC	Teachers' Activities Centre

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# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

This chapter provides an overview of the study. In the first section, background information is presented to enable understanding of the global concept of Information Literacy (IL) and its development as well as implementation in Malaysia to date. This is followed by a discussion of the problem statement and the presentation of the research objectives and research questions. The chapter then provides the significance of the study within its scope and limitations. Finally, an operational definition of key terms is provided to enable definition of the main concepts of this study.

### 1.1 The Global Nature of Information Literacy

Literacy is a human right and the key to basic education. The Universal Declaration of Human Rights signed in 1948 (UNESCO, 2007) gave official recognition to this right more than 60 years ago. However, illiteracy is still a global problem, as evident in the need for the proclamation of the United Nations Literacy Decade (2003-2012). It is estimated that there are 776 million illiterate people and as such, the *Education for All* movement will seek to increase the literacy rate by 50% by 2015 (UNESCO, 2011).

As basic literacy is a critical need, new forms of literacy have emerged as being essential for humankind. Among the needs in today's globalized information-rich world is the ability to locate, evaluate and effectively use information in a variety of ways. In today's world, the creation, distribution and utilization of information are significant economic, political and cultural activities. The Prague Declaration, *Towards an*

*Information Literate Society* (UNESCO, 2003), acknowledged that the foundations of an information society are important for the social, cultural and economic development of nations, institutions, communities and individuals at the present and beyond. It further emphasized that firstly, information literacy (IL) is essential to access information and secondly, the information and communication technologies must be used effectively. This fosters fairness, tolerance and mutual understanding among countries and people through information use in multicultural and multilingual contexts. The declaration urged Governments, civil society and the international community to adopt the suggested policy, as IL is a concern among all sectors of society and therefore, should be an integral part of education for all. This is in line with the Universal Declaration of Human Rights (1948).

In addition, the Alexandria Proclamation on Information Literacy and Lifelong Learning reaffirmed that information literacy is not just a necessity but also a basic human right that forms the basis for lifelong learning, which in turn creates an information society (Garner, 2006). In order to achieve this successfully, the proclamation urged Governments and intergovernmental organisations to pursue policies and facilitate programmes to adopt information literacy and lifelong learning within various socio-economic sectors in their country. This proclamation drew attention to the recommendations for empowering citizens across the globe to be information literate. It also points to various actions, strategies and approaches to increase collaboration among governments, NGOs, elements of the civil society and international organizations, as well as opportunities for implementation and future plans to promote information literacy and lifelong learning (Breivik, Byrne & Horton, 2006).

The Moscow Declaration on Media and Information Literacy (UNESCO, 2012), appeals to the relevant authorities to integrate media and information literacy in all national educational policies. It also urged support for necessary structural and pedagogical reforms in the education system and the integration of media and IL in the curricula including systems of assessment at all levels of education which includes workplace learning and teacher training. These proposals further emphasized the importance of IL in national education systems. The main purpose is to improve student success in the classroom. However to do so, the policy makers must first understand that well-trained teachers play an important role in achieving this (Boyd, Lankford, Clothfelter, Ladd & Vigdor, 2004; Loeb, Rockoff, & Wyckoff, 2007). This would include well-trained school librarians to impart IL to students. However, there remains an ideological divide on how to prepare school librarians, what the role of school librarians is and how to ensure successful and effective implementation of IL in the school curricula.

## **1.2 Background for the Study**

Malaysia, is undertaking its nation-building mission to create a progressive and high-income nation, as envisioned in Vision 2020 of the Tenth Malaysia Plan: 2011-2015 (Government of Malaysia, 2010). In order to achieve these aspirations, the Tenth Malaysian Plan adopts an integrated whole-life-cycle human capital and talent development approach, beginning from early childhood education until adult working life. The education system will be revamped to improve students' results, upgrade their skills to increase employability and reform the labour market to produce an excellent and efficient workforce towards transforming Malaysia into a high-income nation. At

the same time, the plan intends to develop Malaysia into a regional educational hub by increasing the capabilities for scientific research and development.

The Malaysian Government spends billions of ringgit to develop quality human capital for the nation. The government continues to implement various programmes towards the creation of a pool of trained and competitive work force (Ministry of Finance, 2009). The government has allocated RM30 billion for primary and secondary education, which will benefit 5.5 million students nationwide (Ministry of Finance, 2010). In addition, the education sector received an allocation of a sum of RM54.6 billion or 21% of the total allocation in the 2013 Budget. This is an effort to enhance education excellence in the academic achievements, competencies and skills (Ministry of Finance, 2013). Thus, these allocations will help to improve the learning, training and the application of information technologies in schools which will further enhance the soft skills or IL skills training among teachers.

Education is the major contributing factor for the quality of human capital in the country as well as contributor to the current economic growth due to free access to education (Rao & Jani, 2009). The investment in human capital development is important for the future development and growth in the financial services sector. The development of human capital requires knowledge, skills, competencies and capabilities especially in the highly knowledge-intensive and skills-based industry. In order to build human capital, the combined efforts of internal strategies within the financial sectors need to be supported by the education providers (Zeti Akhtar, 2008). Therefore, the government needs to include IL at all levels of education in every economic sector (Garner, 2006).



IL forms the basis for educated societies and underlines the need for all people to attain IL skills (Catts & Lau, 2008). It also provides a critical skill for successful education and workforce preparation at the present time. These are the lifelong learning skills needed to live responsibly and work efficiently in today's information society (Obama, 2009). In a positive sense, IL will become the standard-bearer for academic achievement, workforce productivity, competitive advantage, and national security (National Forum on Information Literacy, 2011).

### **1.3 Information Literacy in Malaysia**

In the past decade, IL activities and research concentrated on the higher education sector in the world (Edwards, Bruce, & McAllister, 2004). The trend is similar in Malaysia where IL development is also focused on the local higher education sector (Edzan, 2008).

IL gained importance in the local higher learning institutions in the mid-nineties (Kim, 1998; Laila & Azizah, 1997). The academic libraries started to actively conduct various programmes, mainly library orientation, library skills sessions, library research training, information skills sessions and other similar programmes where the main aim was to educate on the usage of information (Edzan, 2008). These institutions carried out these programmes on their own initiative without any efforts to standardize the content or delivery method with other institutions.

In the late nineties, the need for IL was addressed by introducing Information Skills courses for undergraduates at some universities. These courses were prepared, managed and delivered by academic librarians (Chan, 2003; Edzan & Zainab, 2005).

Several Malaysian public and private university libraries have also begun delivering IL at different levels. As such, all learning institutions do need a standardized content and delivery mechanism for implementing IL in Malaysia (Yushiana, 2003). The University of Malaya academic library managed to put forward an Information Skills Course as one of the basic requirements for all undergraduates of the university (Chan, 2003). Since then, most universities have conducted their own IL programmes with an aim to produce information literate graduates who are entering the workforce (Szarina, Norliya, Mohd Sharif, Nor Rashimah & Rasimah, 2006). As most of the university undergraduates come from the mainstream secondary educational system, information literacy education (ILE) ought to start at school level. Yet, the need for ILE in Malaysian schools only emerged in 2002.

The 31<sup>st</sup> Annual Conference of the International Association of School Librarianship incorporating the 6<sup>th</sup> International Forum on Research in School Libraries was held in Petaling Jaya in 2002. It was at this conference that the Ministry of Education raised the need for IL. The then Minister of Education (Musa, 2002), announced that the Minister of Education had outlined several measures to promote IL which included “reading and IL courses for state resource centre personnel to expose them to effective reading and information skills, enabling them to carry out such courses in localised situations”.

IL continued to be promoted by the Minister of Education, especially through the Education Technology Division that manages the school libraries in the country. ILE was introduced in schools through school libraries. Consequently, information literacy teaching modules were distributed to school teachers. These modules were

*Teaching and Learning Guidelines for School Resource Centre Usage and Information Skills* (Bahagian Teknologi Pendidikan, 2002a) and its syllabus and specification for Primary Year 1-6 (Bahagian Teknologi Pendidikan, 2002b). These modules were used as guidelines for school librarians to conduct information literacy lessons in schools. Though guidelines were in place, studies showed that information literacy education was not successfully implemented (Raja Abdullah, Raja Ahmad & Kamaruzaman, 2011; Tan, Gorman & Singh, 2012).

The *School Resource Centre Management Guidelines for Library and Media Teacher* (Bahagian Teknologi Pendidikan, 2007) highlighted that information literacy is an extension of library skills which need to be emphasized in the education curriculum. As a result, school librarians are entrusted with the responsibility to promote reading and ILE in order to improve the quality of teaching and learning. They are expected to 'explain' Information literacy to teachers and students. They are also expected to share their responsibility with teachers in developing information literacy education in schools (Tan, Gorman, & Singh, 2012). Based on the same guidelines, three information literacy models were suggested for school librarians. These are The Big Six Skills (Eisenberg & Berkowitz, 1990), Information Process (Kuhlthau, 1993) and Empowering8 (Wijetunge & Alahakoon, 2005).

The teaching guidelines (Bahagian Teknologi Pendidikan, 2007) are, however, merely a reference for school librarians. There are no formal directives requiring mandatory implementation of information literacy education in Malaysian schools. The training of school librarians is merely done through short courses, and it is assumed these teachers will learn on the job. To date, there has not been a conclusive

comprehensive study on the issues that are plaguing the successful implementation of information literacy in Malaysian schools.

#### **1.4 Statement of Problem**

The literature suggests that information literacy education is embedded and integrated in the Malaysian Integrated Primary and Secondary School Curriculum of 1982 or Curriculum Standard for Primary School (2012-2015) (Abrizah, 2008; Chan, 2002; Education Technology Division, 2005; Edzan, 2008; Fatimah, 2002; Musa, 2002; Yusoff, 2006), but there is no concrete empirical research to confirm or deny the implementation of information literacy in the school curriculum (Halida et al, 2011; Saidatul Akmar, Dorner & Oliver, 2011).

Thus, if information literacy education is embedded in the Malaysian curriculum, as the literature suggests, then school librarians are expected to be the information literacy educators (Bahagian Teknologi Pendidikan, 2007; Fatima, 2002; Yusoff, 2006). In *the Standards for the 21st-Century Learner* (2008), it is emphasized that information literacy includes digital, visual, textual, and technological skills and school librarians are to provide instruction, learning strategies, and practice in using the essential learning skills needed in the 21st century. AASL (2013), proposes the school librarian as cadre of school specialists - reading specialists, technology integration specialists, curriculum specialists, or any other specialists with a whole-school mission. These roles require school librarians to be knowledgeable in information literacy and constantly update their personal skills in order to work effectively with teachers, administrators, and other staff to assist them in their information issues. However, it is

not known the extent to which, the 'Malaysian school librarians' are either capable, or prepared, for undertaking their role as information literacy educators.

To date much of the research on IL implementation has focussed mainly on pedagogical approaches in delivering and assessing effective information literacy instructions (Horton, 2008; Doyle, 1992; Oberg 2001; Bruce 2002, Williams and Wavell, 2006; Halida et al, 2011; Hazen, 2009; Intan Azura & Shaheen, 2006; Intan Azura, Shaheen & Foo, 2008) or the instructional role of the library media specialist (Church, 2006, 2007; Dotan & Aharony, 2008; drake, 2007; Gbaje, 2008). There have also been several studies on the perceptions of school media specialist or school librarians on their role in information literacy education (Person 1993; McCracken, 2001; Miller, 2002; Martin, 2011; Smith, 2013; Subramaniam et al, 2013).

Studies on information literacy and school librarians have generally found that school librarians do not fully understand the concept of information literacy. They often misunderstand it as information communication technology (Diao & Chandrawati, 2005; Norhayati, Nor Azilah & Mona, 2006b; Norhayati, 2009b). They assume that information literacy is the ability to look for information online and presume that this capability as being information literate.

Malaysian School librarians also appear to be lacking in information literacy skills and competencies (Tan, Gorman & Singh, 2012). A study in Singapore (Intan Azura et al, 2007) for example, revealed that trained teachers in LIS are able to apply their proficiencies in pedagogy and library science in integrating IL within the curriculum but the same cannot be said about teachers in Malaysia. A study by Tan and

Singh (2008) revealed that school librarians in Malaysia perceived themselves to have 'average' to 'poor' levels of information literacy, including technological and information retrieval skills. As Branch and de Groot (2009) cautioned, even teachers with a Master in Education may not be able to model lifelong learning. According to Kamal & Normah (2012a), school librarians in Malaysia also lack librarianship skills. Research by Smith (2013), found that secondary teachers are confused about the term IL and are ill-prepared to instruct IL effectively. These literatures indicate that the functions of school librarians continue to evolve as the need for IL increases (Blevins, 2004; Church, 2007).

Many school librarians have difficulties teaching IL because have not been provided with ILE (Kamal, & Normah, 2012b). Several researcher found that they are unable to teach information literacy concepts and research strategies to their students (Edzan & Mohd Sharif, 2005; Saidatul Akmar, Dorner & Oliver, 2011). They are unable to do this as it has yet to be put into practice in schools (Raja Abdullah, Raja Ahmad & Kamaruzaman, 2011).

Another pertinent issue is that the Ministry of Education (MoE) in Malaysia appears to overlook the importance of information literacy education implementation in the education curriculum. For example, lack of an official ILE policy (Edzan & Mohd Sharif, 2005; Saidatul Akmar, Dorner & Oliver, 2011), official ILE standards (Che Normadiah, 2001; Education Technology Division, 2005), and official recognition of ILE implementation in the curriculum (Norhayati, 2009b; Norhayati, Nor Azilah, & Mona, 2006a; Singh, Choovong, Cheunwattana, Guaysuwan, & David, 2006; Tan & Singh, 2008). Without proper strategies, information literacy education framework, or

official documentations to support any ILE implementation in schools, it is difficult for school librarians to put ILE into practice.

The school librarians are at the forefront of successful ILE implementation in schools, yet little is known about the preparedness or readiness of school librarians in successfully executing this role. To date the extent of school librarians' readiness in the ILE implementation in Malaysian secondary schools is unknown. The literature has suggested that the school librarians' understanding of and competencies in ILE are in need of development. In particular, school librarians may not have been prepared to teach IL (Combes, 2008; Diao & Chandrawati, 2005; Duke & Ward, 2009; Norhayati, 2009b; Tan & Singh, 2008, 2010).

In general, numerous studies have attempted to investigate the school librarians' instructional roles (Moore and Trebilcock, 2003; Houston, 2006; Probert, 2009), collaborations in IL instructions (Coatney, 2006; Pratschler, 2007; Loertscher, 2008), leadership (Belisle, 2005; Long, 2007), school librarians' education (Lee, et al, 2003, Raja Abdullah & Saidina Omar, 2003; Norhayati, 2009), IL curriculum (Henri, Kong, Lee, & Li, 2006; Intan Azura, Shaheen, & Foo, 2008) and policy (Russell, 2005; Henri et al., 2006; Horton, 2008; Bradley, 2013), few studies that have sought to understand the necessities and readiness of school librarians to implement ILE in schools. Ritchie (2011), examined UK and Scotland school librarians' self-perceived status within the school and found that most school librarians had high self-perceived status which was most influenced by support from the school management and their role within the school. Her study also revealed pertinent issues such as inadequacies in their training and their role within schools.

Therefore, the intention of this study is to address this void and present a model of school librarian readiness towards IL implementation at schools. An investigation into the readiness of school librarians based on their own viewpoint and exploration of other organizational factors influencing IL implementation will contribute towards a practical solution to the evolving nature of ILE.

### **1.5 Objectives of the Study**

This study focuses on the implementation of ILE in Malaysian schools and the role of the school librarians. It attempts to address the concerns that school librarians are not adequately prepared in delivering the IL program in schools. The main aim of the study was to determine the readiness of the school librarians towards the implementation of information literacy in secondary schools. It also investigates the factors that influence information literacy implementation in Malaysian secondary schools. The objectives are:

1. To explore school librarians' perception about information literacy implementation in Malaysian secondary schools.
2. To explore school librarians' readiness for information literacy implementation in Malaysian secondary schools.
3. To determine the organizational factors influencing the implementation of information literacy education in Malaysian secondary schools.



## **1.6 Research Questions**

This research addressed of four research questions. The first question addressed the general perception about IL implementation in schools. The subsequent two questions address the readiness of school librarians based on knowledge, skills and attitude towards their role in IL implementation. The fourth question addressed the factors contributing to the implementation of IL in schools. This study aimed to answer the following questions in relation to the stated objectives:

1. What is the general perception by school librarians' about information literacy implementation in Malaysian secondary schools?
2. What is the level of school librarians' readiness for information literacy implementation in Malaysian secondary schools?
  - i. What is the level of school librarians' cognitive readiness?
  - ii. What is the level of school librarians' functional readiness?
  - iii. What is the level of school librarians' technical readiness?
3. Do experience and professional qualifications influence school librarians' readiness?
  - i. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience?
  - ii. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the four levels of school librarians' professional qualifications?

- iii. Is there a statistically significant mean difference in school librarians' functional readiness across the three levels of school librarians' experience?
  - iv. Is there a statistical significant mean difference in the school librarians' functional readiness across the four levels of school librarians' professional qualifications?
  - v. Is there a statistically significant mean difference in school librarians' technical readiness across the three levels of school librarians' experience?
  - vi. Is there a statistical significant mean difference in the school librarians' technical readiness across the four levels of school librarians' professional qualifications?
4. What are the organizational factors influencing the implementation of information literacy in Malaysian secondary schools?

This study will fill the gaps in the literature by contributing to understanding the necessities and readiness of school librarians to successfully implement ILE in schools.

### **1.7 Scope of Study**

The research presented a general overview of school librarian perception of the current status of IL in Malaysian secondary schools. The primary focus was examining the readiness for IL implementation among school librarians in secondary schools nationwide. This was to generalize the outcome of school librarians' readiness as a whole.

The research focused on secondary schools in Malaysia based on the literature that indicated IL is embedded and integrated in the secondary school curriculum (Abrizah, 2008; Chan, 2002; Education Technology Division, 2005; Edzan, 2008; Fatimah, 2002; Musa, 2002; Yusoff, 2006). The IL skills and elements are found in the school project such as the History coursework for Form 3 (BPK, 2002) and the History coursework for STPM/ A level (Majlis Peperiksaan Malaysia, 2014).

The level of school librarians' readiness is measured solely based their self-reporting measured through their perception of their understanding of IL, their role in IL education and their IL skills. The self-assessed IL skills, which are being discussed, focus on "IL as the ability to locate, evaluate and use effectively from various sources" based on the IL Big Six Model (Eisenberg, Lowe, & Spitzer, 2004). This study does not attempt to investigate the actual implementation of IL based on practices, but rather focuses only on school librarians' readiness for implementation.

## **1.8 Significance of the Study**

This research was designed to determine the readiness of the school librarians towards the implementation of information literacy in schools. It also investigates the factors that influence information literacy implementation in Malaysian secondary schools. To date there has been no study investigating IL implementation in schools solely based on school librarians' readiness. Readiness has not been conceptualised and independently measured in IL research.

Change experts contend that organizational readiness is critical precursor to successful implementation. Kotter (1996) argues that half of the failures to implement

large-scale change occur because organizational leaders failed to establish sufficient readiness. Thus school librarians' readiness is imperative for successful ILE. As such the study identifies the current needs of IL among school librarians and provides an insight into the status of IL skills, knowledge required or needed and teachers' readiness to engage themselves as school librarians as well as information specialists in school libraries. This will point out the necessity of IL in the education system. Therefore, this research fills up the gap created by lack of research in IL and school librarianship in the country.

Norhayati (2009) had designed and developed an IL training module based on the Big Six skills for school librarians. Her study involved a small selected group of twenty school librarians in Penang. It focused on IL training and the use of information skills. However, her findings did not illustrate the school librarians' individual information skills. Therefore, this research will help to create a complete picture of ILE, school librarianship and the factors influencing the implementation of IL in schools. Incidentally, this would be the first such research in the country.

This research will also make an important contribution to the scholarly literature on IL among school librarians. This is the first research that describes the current status of school librarians' readiness in the Malaysia and the impact of LIS related qualifications and experience in making SLs ready for ILE. It is hoped that this will inspire all school librarians to attain qualifications in Library and Information Science in order to create more options and opportunities for career advancement as professional information specialist.

This study was designed to address part of the current deficiencies in the local literature. Most studies on school librarians focused on small groups of teachers and on issues such as school librarians' competencies (Abrizah, 1999), the need for school librarian training (Raja Abdullah & Saidina Omar, 2003; Kamal & Normah, 2012b), the role of school librarians (Kamal, & Normah, 2012a) and IL professional development for school librarians (Norhayati, 2009a; Norhayati, et al., 2006a). In comparison with them, this study provided an extensive view on IL implementation from the perspective of the implementers.

### **1.9 Definition of Terms**

The following definitions are for clarification as regarding terms used within this study.

Information literacy (IL) is defined as “knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner” (CILIP, 2012). Others define IL as the ability to access, evaluate and use information from a variety of sources (Doyle, 1992; Eisenberg, et al., 2004).

Library media teacher is the official term used in Malaysia for school librarians. They are qualified teachers selected to be library media teachers with a minimum qualification of having attended the 35H Basic Resource Centre Management Course. They plan and manage the school libraries (Ketua Pengarah Pelajaran Malaysia, 2005). In this research, the term ‘school librarians’ is used instead of library media teachers.

School librarian is the term used for comprehensible discussions in this thesis. School librarian is defined as “the professionally qualified staff member responsible for planning and managing the school library” in the School Libraries Manifesto, International Federation of Library Associations and Institutions (IFLA), (Satre and Willars, 2002). The International Association of School Librarianship (IASL) also advocates that school librarians be qualified teachers who have, in addition, completed professional studies in librarianship (IASL Board of Directors, 1993).

In the United Kingdom, school librarians are qualified teachers with additional qualifications such as a certificate, diploma or degree in school librarianship. They focus on integrating information technology with the curriculum, and they work with teachers to design curriculum and research units (Coish, 2005).

In Australia, a school librarian holds recognised teaching qualifications with additional qualifications in librarianship and is eligible for an Associate (i.e. professional) membership with the Australian Library and Information Association [ALIA]. Within the broad fields of education and librarianship, school librarians are uniquely qualified. This asset is valuable because curriculum knowledge and pedagogy are combined with library and information management, knowledge, and skills (Australian School Library Association and Australian Library and Information Association, 2001). In the United States, a school librarian is defined as a professional licensed School librarian with specialized training and education in school library media profession (Woolls and Loertscher, 2005).

In this study, the term '*school librarian*' will be used to denote the definition of a school librarian in the policy statements of International Federation of Libraries Associations; School Libraries Manifesto (IFLA, 2006) and International Association of School Librarianship (IASL Board of Directors, 1993) and American Association of School Librarians (2013).

School resource centre is the term used for a school library in Malaysia. This was the outcome of a 1<sup>st</sup> May 1983 directive by which school library and the audiovisual room were centralised under one administration and be known as the School Resource Centre (SRC). The school resource centres are managed by the School Resource Centre Unit of the Education Technology Division (ETD), Ministry of Education, (Fatimah, 2002). The term 'school library' is used in this thesis.

Readiness is focused on the enthusiasm of an individual to learn skills, concepts and attitude for the betterment of their work, families and themselves (Fogarty, Fogarty, & Pete, 2004). Readiness prevails when adults are able to face the circumstances that require them to use new knowledge, skills or abilities (McCain and Tobey, 2004).

School librarians' readiness is the extent to which SL are being aware and knowledgeable about the concept of IL (cognitive readiness), to build an attitude for the betterment of their work in knowing their role in the implementation of IL at school (functional readiness) and also having the set of skills of an IL literate person (technical readiness).

Cognitive Readiness is defined as school librarians' understanding and perception about IL as a concept and their ability to identify the attributes of an information literate person.

Functional Readiness is defined as school librarians' understanding and ability to carry out their tasks based on their role as educators. It is measured based on how school librarians perceive their roles as IL educators.

Technical Readiness is defined as having IL skills required for IL education. It is measured based on school librarians' self-assessed IL skills.

#### **1.10 Organization of the thesis**

Chapter one presents the background study, objectives, research questions, significance, scope and limitations of the study. Chapter Two reviews the relevant research literature on IL and school librarians. It presents the current preview of IL practices and its development in the Malaysian education system. This includes the factors affecting the implementation of ILE in schools.

Chapter Three elaborates the research method used in data collection and data analysis of this study. Chapter Four reports the result of the interviews pertaining to the next phase of the study and Chapter Five reports the findings of the quantitative phase of data collection and analysis. Chapter Six concludes the study by giving a summary of the results of the research questions posed in Chapter One. It highlights the contributions of the study and makes recommendations for further study.



## **CHAPTER 2**

### **REVIEW OF LITERATURE**

#### **2.0 Introduction**

The main aims of the study were to determine the readiness of the school librarians towards the implementation of information literacy in schools. It also investigates the factors that influence information literacy (IL) implementation in Malaysian schools. The literature presented in this chapter includes a review of the background of IL development, school librarians' role in information literacy education (ILE) and studies on the implementation of ILE in schools. It attempts to identify issues arising from the evidence and gaps in the literature on IL implementation in schools.

The main aims of the study were to determine the readiness of the school librarians towards the implementation of information literacy in schools. It also investigates the factors that influence information literacy implementation in Malaysian schools (Section 1.5, pg. 11-12).

#### **2.1 Developments in Information Literacy**

The history and development of IL are well covered in the literature (Corrall, 2008; Doyle, 1994; Eisenberg, Lowe, & Spitzer, 2004; Elmborg, 2006; Grassian & Kaplowitz, 2001; Owusu-Ansah, 2004; Pinto, Cordon, & Gómez Díaz, 2010; Spitzer, Eisenberg, & Lowe, 1998; Virkus, 2003).

IL was first introduced by Paul Zurkowski, the president of the Information Industry Association in his proposal to the National Commission on Libraries and

Information Science (NCLIS). Zurkowski (1974) describes that information literate people are those who have been trained in the application of information resources to their work and they are able to exploit information resources. They learned and used various information skills and techniques as well as primary sources to solve their problems.

Many definitions have emerged and evolved through time as well as numerous researchers' debate on the term itself (Breivik, 1999; Doyle, et al., 1994; Owusu-Ansah, 2005; Snaveley & Cooper, 1997). Although the definition has changed over time (Eisenberg, et al., 2004; Spitzer, et al., 1998; Taylor, 2008), the core meaning is established from the American Library Association (ALA) Presidential Committee on IL: Final Report (1989). It described an information literate person, as "a person who must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." Campbell (2004) agrees that the ALA definition is broad enough for the entire spectrum of information skills and will probably still be applicable for many decades.

The term IL is accepted, clarified, and used carefully as well as it contributes to library discipline. Snaveley and Cooper (1997) and Owusu-Ansah (2005), share a similar view about this. Their views point out that IL knowledge contributes to improve student capabilities, explore the role of the library in determining the legitimacy and desired extent of the library's participation in the education of information literate students.

Thus, the term IL has evolved in the last thirty years and has reached a common consensus in its conceptualization of an information literate person (Hazen, 2009). At

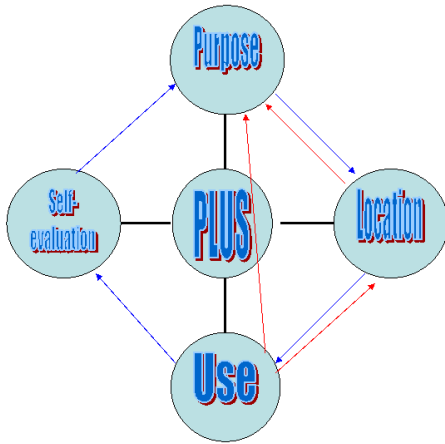
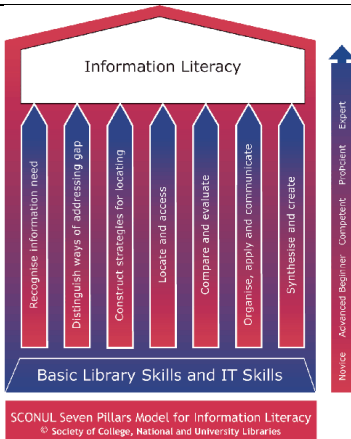
present, it is the responsibility of all “information professionals and librarians” to help students to become self-sufficient learners (Farmer, 2005). It is believed that students need to be prepared for the new challenges in this information age and information literacy will guide them to become lifelong learners.

There are several of IL models available. Table 2.1 provides a brief overview of some of the well documented IL models. These models represent the most frequently use in the IL research.

Table 2.1 Information literacy models

Model	Author	Context	Content / Diagram																																
Irving Information Skills	Ann Irving (1985)	Widely used in research projects focused on information skills development in secondary schools in UK.	<p>Nine Step Information Skills Model consisting of:</p> <ul style="list-style-type: none"><li>a. Formulating</li><li>b. Identifying</li><li>c. Tracing</li><li>d. Examining</li><li>e. Using</li><li>f. Recording</li><li>g. Interpreting</li><li>h. Shaping</li><li>i. Evaluating</li></ul> <p>Ann Irving (1985)</p>																																
Information Seeking Model	Carol Collier Kuhlthau (1988)	Widely used for research focused on information-seeking of practitioners within various fields of professional work such as librarian, academicians, medical professionals, engineers and lawyers, etc.	<p>Model of the Information Search process</p> <p>Stage 1: Initiation Stage 2: Selection Stage 3: Exploration Stage 4: Formulation Stage 5: Collection Stage 6: Presentation</p> <div><p>Model of the Information Search Process</p><table><tr><th></th><th>Initiation</th><th>Selection</th><th>Exploration</th><th>Formulation</th><th>Collection</th><th>Presentation</th><th>Assessment</th></tr><tr><td>Feelings (Affective)</td><td>Uncertainty</td><td>Optimism</td><td>Confusion Frustration Doubt</td><td>Clarity</td><td>Sense of direction / Confidence</td><td>Satisfaction or Disappointment</td><td>Sense of accomplishment</td></tr><tr><td>Thoughts (Cognitive)</td><td colspan="2">vague →</td><td colspan="2">focused →</td><td colspan="2">increased interest</td><td>Increased self-awareness</td></tr><tr><td>Actions (Physical)</td><td colspan="2">seeking</td><td>relevant information</td><td>Exploring</td><td>seeking</td><td>pertinent information</td><td>Documenting</td></tr></table></div> <p>Kuhlthau (1988)</p>		Initiation	Selection	Exploration	Formulation	Collection	Presentation	Assessment	Feelings (Affective)	Uncertainty	Optimism	Confusion Frustration Doubt	Clarity	Sense of direction / Confidence	Satisfaction or Disappointment	Sense of accomplishment	Thoughts (Cognitive)	vague →		focused →		increased interest		Increased self-awareness	Actions (Physical)	seeking		relevant information	Exploring	seeking	pertinent information	Documenting
	Initiation	Selection	Exploration	Formulation	Collection	Presentation	Assessment																												
Feelings (Affective)	Uncertainty	Optimism	Confusion Frustration Doubt	Clarity	Sense of direction / Confidence	Satisfaction or Disappointment	Sense of accomplishment																												
Thoughts (Cognitive)	vague →		focused →		increased interest		Increased self-awareness																												
Actions (Physical)	seeking		relevant information	Exploring	seeking	pertinent information	Documenting																												

Table 2.1 Continued

Model	Author	Context	Content / Diagram
Big 6	Eisenberg and Berkowitz (1990)	Widely used in schools in USA	<p>The six stages of BIG Six (Eisenberg/Berkowitz Information Problem-Solving, 1990)</p> <ol style="list-style-type: none"> <li>1. Task Definition</li> <li>2. Information Seeking Strategies</li> <li>3. Location and Access</li> <li>4. Use of Information</li> <li>5. Synthesis</li> <li>6. Evaluation</li> </ol>
PLUS Information Skills Model	Herring, (1996), Herring, (1999)	Provides a framework for pupils and teachers to work with in order to complete an assignment. Widely used in secondary schools in UK.	<p>PLUS incorporates the elements of Purpose, Location, Use and Self-evaluation.</p>  <p>Herring (1996), Herring (1999)</p>
SCONUL, the Seven Pillars of Information Skills model	The SCONUL Working Group on Information Literacy, (1999)	Widely used in higher education.	 <p>The SCONUL Working Group on Information Literacy, (1999)</p>

Though varying in terms used, these models basically include the major steps in defining, seeking, accessing, evaluating and presenting information. These models are flexible, adaptable and provide the basis to formulate ideas, framework and terminology

to initiate IL discussions. These IL models are commonly used for IL instructions in school libraries and SCONUL is usually used for IL instructions in higher education.

## **2.2 Information literacy in the Curriculum**

Though the implementation of IL may differ in different countries, it can be integrated into courses or taught as an orientation programme in the library (Singh, et al, 2006a). This may be found in the Malaysian situation, where IL is taught by the librarians at the university and through some evidence of incorporation in subjects taught at schools (Abrizah, 2008; Che Normadiah, 2001; Education Technology Division, 2005; Edzan, 2008; Fatimah, 2002; Mohamad & Mohd Darus, 2006; Mohamad, Mohd Darus, & Fadzil, 2006; Musa, 2002; Yusoff, 2006).

IL may form a distinct subject area within information studies or library science disciplines. However, there are diverse opinions between education practitioners over its implementation within the education system (Henri, Kong, Lee, & Li, 2006). Therefore, planning and implementation may be inter-disciplinary and extracts from different discipline areas may be synergized in planning IL strategies (Intan Azura, Shaheen, & Foo, 2008). Then again, Horton (2008) insisted that the integration of IL into the ongoing reformation of the educational system needs to be undertaken in the context of ongoing education policy formulation and reforms. Furthermore, teachers and information specialists need to reflect on the changes in the educational culture associated with promoting lifelong learning to help bridge the gap between the policy and practice (Bruce, 2004).

Consequently, appropriate pedagogical approaches need to be designed for school librarians and teachers so that IL instructions are effective and well-established. A long term and continuous IL teaching approach based on definite and specific pedagogy needs to be in place to ensure students acquire IL competencies and the ability to utilize and practise these skills in schools and beyond.

The literature points to various approaches of IL implementation either to integrate IL into the curriculum within subjects or as a separate subject in the classroom. These approaches affect whether IL is taught as a library based skill in school libraries. IL may be necessary in all curricular areas. Both Doyle (1992) and Oberg (2001) agree that to achieve successful instructional objectives, it is important to integrate IL into the curricular in schools. Integration of IL may prepare students to become confident and competent learners who are successful lifelong learners, responsible citizens and wage earners.

According to Doyle (1992) school librarians are the experts of information sources may become collaborators in achieving instructional objectives. This view is supported by Oberg (2001) who writes that in Canada, most teachers incorporated IL into their teaching subjects and curriculum programmes, which would further enhance students' learning in exploration, understanding and creation of an expanded range of media and information.

In addition, Bruce (2002) agrees that the key to implementing IL education involves bringing real life experiences of information use into the classroom and creating opportunities for critical reflection on the learning process to foster an

awareness in learners of what they have learned. Teachers who value the new paradigms find it much easier to embrace IL education.

Therefore, the IL implementation instructional programmes in school libraries need to recognize and provide for all those involved in implementing the programme, especially classroom teachers and administrators who are unfamiliar with the programme. New school librarians may also need to be aware of how their own experiences as classroom teachers may help or hinder them in their new role (Oberg, 1991). This may be applicable in the local school libraries.

On the other hand, numerous studies have shown that the School Library Programmes have an impact on the academic achievement of students (Lance, 1994, 2001, 2002, 2004; Lance, et al., 2000a; Lance, et al., 2007). The integrated approaches to IL teaching produce information literate students who know how to use information and ideas effectively. Therefore, IL may be an integral part of the school curriculum and approach to attain successful academic achievement.

In Malaysia, there are no clear guidelines on how IL education is formalized. Some indication is evident in official documents from Education Technology Division (ETD). The ETD suggests IL models namely Big Six Model and Empowering 8 model in the handbook *Teaching and Learning Guidelines of School Resource Centre: Guidelines for School librarians* (Bahagian Teknologi Pendidikan, 2007). Both ETD (2005) and Harun (2006), highlight that the embedded IL skills are the Big 6 Skills (Eisenberg & Berkowitz, 1990; Eisenberg, et al., 2004; Spitzer, et al., 1998). Harun (2006) also emphasizes that the State Education Technology Departments (SETD) and

Teachers' Activities Centre (TAC) play active roles as training centres to train school librarians as IL educators. They provide teaching and learning materials, expertise, and professional support in IL teaching-learning process. Harun (2006) adds that more self-access centres, cybercafé-like centres equipped with information technologies facilities would be set up in schools under the 9th Malaysian Plan. Therefore, more IL project-based learning and problem-based learning are being planned to prepare students to become information literate.

Another type of documentation includes seven IL skills outlined in the curriculum specification by the Malaysian Curriculum Development Centre (CDC). These skills include thinking skills, learning how to learn skills, information and communication technology (ICT) skills, values and citizenship, multiple intelligences, knowledge acquisition and preparation for the real world (Education Technology Division, 2005) but there is still uncertainty that IL term is formally presented in curriculum (Chan, 2002). Even the ETD, (2005) research showed that that the majority (80%) of the respondents agree that some elements of IL exist in the National Education Policy but these studies are isolated from education academicians' environment.

Abdullah (2008) and Edzan (2008) affirm that IL is may be embedded within the Malaysian Educational system. According to Edzan (2008), IL has been present in the Malaysian education system for some time, but in different forms. Abdullah (2008) describes that schools adopt different approaches to teach IL. School librarians and teachers are supporting IL by teaching students how to use the available technology, including technology in classrooms. Thus, there is some evidence that IL is embedded



within the curriculum in schools, though not as prominent as what is found in the literature of other countries.

On the other hand, Williams and Wavell (2006) state that teachers may accept that IL is embedded within the curriculum but regard it as cross-curriculum skills formation or a separate subject rather than a way of learning and teaching. These may be seen as barrier to IL development and may cause them to believe the implementation of IL will burden them.

Therefore, the uncertainties of the extent of the Malaysian Ministry of Education's emphasis on ILE implementation in schools (Norhayati, 2009; Norhayati, Nor Azilah, & Mona, 2006a), may need further empirical research to test the IL elements in the Malaysian curriculum specifically to confirm or deny this.

### **2.3 The School Librarians**

In many countries, various professional groups have developed policy statements regarding school librarians in their region and locality to suit their interpretation and responsibilities. Different terminologies are used for school librarians in different countries and policy statements from various school library associations or professional groups. These include International Federation of Library Associations and Institutions (IFLA), International Association of School Librarianship (IASL), American Association of School Librarian (AASL), Canadian School Library Association (CSLA), Australian School Library Association (ASLA), which issue individual policy statement on school librarians. Most of the policy statements reveal and confirm that 'school librarians are qualified teachers and

additional qualifications in the area of Library and Information Science (LIS) as in the table below.

Table 2.2 Description of school Librarians based on Library Associations

<b>Library associations or professional groups</b>	<b>Policy Statements</b>	<b>Descriptions of School Librarians</b>
International Federation of Library Associations and Institutions (IFLA)	School Library Manifesto, (UNESCO/IFLA, 2006).	School librarians are the professionally qualified staff members who are responsible for planning and managing the school libraries.
International Association of School Librarianship (IASL)	IASL Policy Statement on School Libraries, (1993).	School librarians are qualified teachers who have completed professional studies in librarianship.
American Association of School Librarian (AASL)	Position Statement on Preparation of School Librarians, (American Library Association, 2010).	School librarians must have a broad undergraduate education with a liberal arts background. They have to hold a masters degree or equivalent from a programme that combines academic and professional preparation in library and information science, education, management, media, communications theory and technology.
Association For Teacher-librarianship in Canada (ATLC) and the Canadian School Library Association (CSLA)	Students' Information Literacy Needs in the 21st Century: Competencies for School Librarians, (1997).	School librarians as professional teachers have a minimum of two years of successful classroom experience. These include additional qualifications in the selection, management and utilization of learning resources, which manage the school libraries and they must work with other teachers to design and implement resource-based instructional programs.
Australian Library and Information Association (ALIA) and the Australian School Library Association (ASLA)	Standards of Professional Excellence for Teacher Librarians, (2004).	School librarians holds recognized teaching and librarianship qualifications, defined as eligibility for associate (i.e. professional) membership for the Australian Library and Information Association [ALIA].

School librarians are qualified teachers with additional qualifications such as a certificate, diploma or degree in school librarianship. They focus on integrating

information technology within the curriculum and work with teachers to design curriculum and research units (Coish, 2005).

Most teachers regard school librarians' role as resource managers (Hockersmith, 2010) but their roles involve interrelations as teachers, collaborators, curriculum leaders, instructional leaders, information specialists, instructional technologists, programme managers and advocates. They are also the connectors to student learning to the greatest possible extent (Church, 2008; Gbaje, 2008; Novo & Calixto, 2009; Reed, 2009).

School librarians are expected to be IL educators (Bahagian Teknologi Pendidikan, 2007; Fatimah, 2002; Yusoff, 2006). Thus, it is most appropriate that IL programmes begin in the school libraries (Education Technology Division, 2005). The relevant authorities may provide necessary support to school librarians so that they are able to perform a better role as school librarians in teaching IL in schools (McCracken, 2001; Morizio & Henri, 2003; Singh et. al., (2006b). Research by Lee, Reed & Lavery (2012), also found that pre-service teachers felt poorly prepared to teach IL to students, had a limited array of information skills and held a narrow view of the role of the school library.

As a reference, the Information Power: Building Partnerships for learning (AASL/AECT, 1998) has clear principles for school librarians as IL educators. School librarians serve as teachers, instructional partners, information specialists as well as programme administrators. These roles require school librarians to be knowledgeable in IL and constantly update their personal skills in order to work effectively with teachers,

administrators and other staff to assist them in their information issues. Their expertise also enables providing services to develop sophisticated skills in IL, including the uses of IT. All these roles are dependent on the other; they contribute to school librarians in providing guidance to school communities to integrate IL into curriculum. The newer document *Standards for the 21st-Century Learner* (2008), continued to underline the school librarians' roles as needed in the 21st century.

The expectation of school librarians as IL educators may differ locally. Thus, in Malaysia, the preparation, experience and qualifications of school librarians are also different from professional librarians who acquired skills through a mainstream information professional or librarianship programme. This clearly shows that school librarians' position remains unclear as they are teachers managing school libraries (Raja Abdullah & Saidina Omar, 2003). Then, there is also little research about school librarians' experience or their views in relation to their roles and responsibilities (Abrizah, 1999). Therefore, we need a clear understanding of their experience and professional qualifications in this matter in order to plan school librarians' preparation programmes.

Generally, school librarians seem to be uncertain about IL generally. Several literatures mention that school librarians always think that IL is the same as information communication technology (ICT) (Diao & Chandrawati, 2005; Education Technology Division, 2005; Norhayati, Nor Azilah, & Mona, 2006b). Most teachers appear to relate IL with reading or ICT, in reality; it includes both literacy and ICT (Probert, 2009). Thus, they may need a deeper understanding about what IL is (Norhayati, 2009). This is

achieved with more exposure to IL training programmes held as part of their professional development (Che Normadiah, 2001; Norhayati, 2009).

As Singh, et al., (2006a) remind us that the successful of school library programmes in relation to IL training programme require the awareness, commitment and support from the senior MoE officials. It needs sufficient preparations, guidelines, strategies, and facilities to integrate IL into regular teaching programmes. This highlights that there is a need for a detailed investigation of these school librarians' IL understanding.

Understanding would not only refer to knowing the concept but also the ability to describe the attributes of an information literate person. Those who are information literate have the ability to learn how to teach (Carr, 1998). More literature states that information literate school librarians understand what it means to be information literate in order to teach students to become information literate. The process of becoming information literate may be initiated at primary school and should be a part of formal training and education in all phases and all subject areas as preparation for lifelong learning (Yusoff, 2006). Besides, Rader (1991) thinks that being information literate is necessary for survival in the future; information literate personnel will be prepared to acquire and use information appropriate for any situation, within or beyond the library, locally and globally. Therefore, we need to know the school librarians' understanding of characteristics of an information literate person if school librarians as IL educator are to educate students to be information literate.

A recent study by Intan Azura et al., (2007) in Singapore found that qualified teachers trained in Library and Information Science (LIS) are able to apply their proficiencies in pedagogy and library science to their teaching and integrate IL within the curriculum. In Canada, Branch and De Groot (2009), argue that there come a time that even the school librarians armed with Masters of Education degree are not sufficient to keep up with the changing demands of the job. They may need to model lifelong learning and try to seek out personal professional development that complements and expands on their graduate education.

As a result, it is timely to seek the opinions of school librarians on whether the levels of qualifications have any relationships with their perceptions.

### **2.3.1 School Librarians in Malaysia**

Generally, school librarians are qualified teachers and part of the teaching community with the same benefits and salary but these may differ in different countries. Some of them may have additional qualifications in librarianship or they may be also qualified librarians (Boelens, 2008; Morizio & Henri, 2003).

In Malaysia, school librarians are teachers, academically qualified and professionally trained in the discipline of Education. They are subject teachers and familiar with the school curriculum (Nor Hashimah, 2007; Lee, Brown, Mekis, & Singh, 2003). They have at least a minimum of three years teaching experience. Once, their services are confirmed with at least three years of teaching experience, they are eligible to be appointed as school librarians (Ketua Pengarah Pelajaran Malaysia, 2005).

They are *selected* teachers and are entrusted with the job to manage as well to develop the school libraries for teachers and students. In addition, they may have full-time teaching responsibilities (Abrizah, 1999). However, many of them may have little or limited LIS qualifications (Raja Abdullah & Saidina Omar, 2003).

Normally, they will be recommended to attend the Basic Thirty-five Hours SRC Management Course followed by Advance Forty-five Hours SRC Centre Management Course prior to or after their appointment as school librarians (Abrizah, 1999). The highest qualification may be a Masters' degree in LIS or Education Technology or Information Science Studies. The criteria are flexible. Although there are continuities of Fourteen Weeks and One Year In-Service SRC Management courses, these are not compulsory for them. More often, qualified teachers who have undergone the training may not be appointed as school librarians in school.

In recent years, the MoE recognises the position of school librarian as full-time in schools. In the MoE's circular (Ketua Pengarah Pelajaran Malaysia, 2005), their job functions varies and they are obliged to teach learning subjects for six to eight periods a week, an estimate of 240 minutes in primary schools and 360 minutes in secondary schools. Their responsibilities include managing the school library budget, annual school libraries programmes and building up book collections. They are expected to collaborate with teachers, the management of the school, Teachers Activities Centres, Education Technology State Department as well as the Education Technology Division to plan, implement information skills programmes, carry out research and provide in-house training to teachers in their respective schools.

### **2.3.2 School Librarians' Qualifications**

In general, qualified teachers are teachers who meet the minimum qualifications set by education authorities for employment as public teachers at the level of education concerned (McKenzie, Santiago, & Organisation for Economic Co-operation and Development, 2005).

In Malaysia, the teachers' qualifications are validated and mandatory as offered by the MoE itself. The teacher education and planning are under the jurisdiction of the MoE but with the establishment of the Ministry of Higher Education (MoHE) on 27 March 2004, the development and training of secondary school teachers was given to the MoHE to handle. The MoHE trains these teachers via government-funded universities (Jamil, et al, 2008). Subsequently, MoE manages the teaching posting and benefits. As there are non-graduate teachers in secondary schools, the MoE targeted 100% percent of graduate teachers to be teaching in all secondary schools by 2010 (Boey, 2010).

These graduate teachers obtain a Bachelor of Science (Education) [B.SC. (Ed.)] or Bachelor of Arts (Education) [B.A. (Ed.) degree or Bachelor of Education (B.Ed.)] programmes (Lee, 2004). Some may have a one-year postgraduate diploma in education after obtaining their first degree. Most teachers also undertake various kinds of upgrading courses to further their own careers in pursuing postgraduate programmes leading to Master degree or Doctor of Philosophy (Ph.D.) degrees.

Only a small group of selected school librarians have attended in-service SRCM one-year course on Library and Information Management, or enrolled in a Masters level



programme at one of the four Malaysian library schools (Lee, et al., 2003) as shown in Figure 2.1. There is a need to improve the opportunity and motivation for them to continue their education in LIS (Morizio & Henri, 2003).

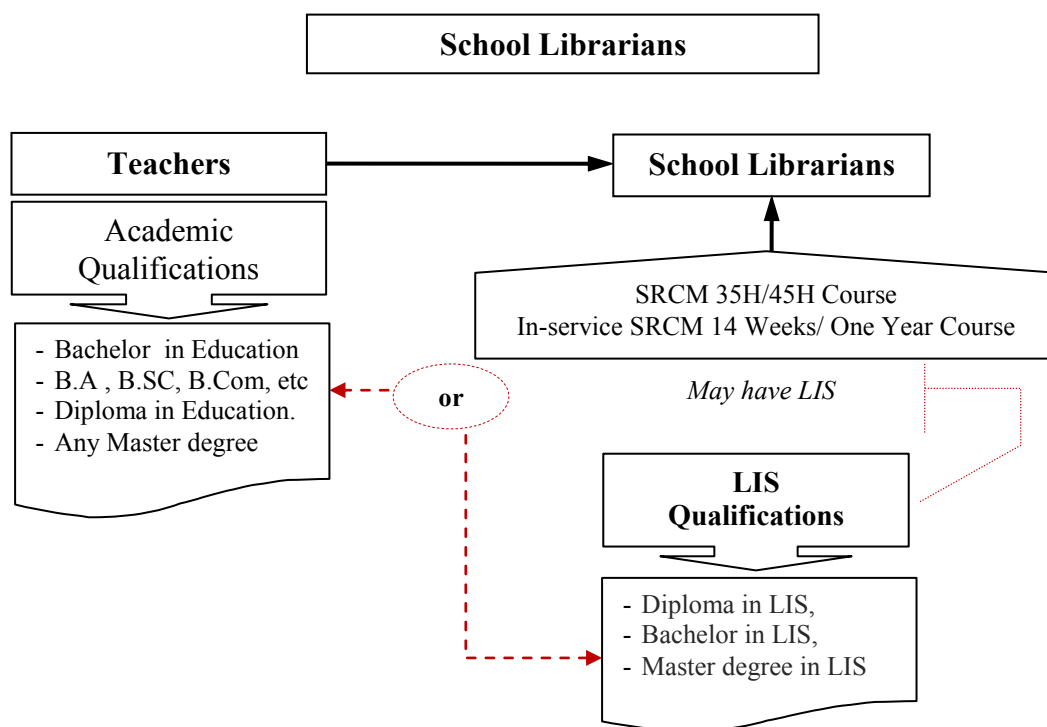


Figure 2.1 School librarians' qualifications

More often, the Malaysian school librarians leave their positions and responsibilities after they have a few years' experience. They may move for promotions of management positions. As a slight difference, in the United States, school librarians decide to leave their profession due to feeling of isolation, feeling of lack of control and self-determination. There, school librarians may have high regard for continuing education and pursue a master's degree with a deeper understanding of the profession as

a longer-term perspective (Farmer, 2007). Therefore, Malaysian school librarians need to consider the opportunities of continuing education in LIS for their careers advancement in school librarianship.

### **2.3.3 School Librarians' Education and Training**

Training typically involves instruction and is aimed at reaching a particular level of competence or operative efficiency as stated by Dearden (1984). Buckley and Caple (1990), clarified "training as a planned and systematic effort to modify or develop knowledge or skills or attitudes through learning experience and to achieve effective performance in an activity or range of activities."

Training is expected to facilitate school librarians' awareness being involved in a learning cycle. Training induces knowledge and understanding, skills and abilities, emotional competence and attitudes that are essential to successful work performance. It enables school librarians to acquire abilities in order to perform adequately a given task or job.

Training changes and successful should improve school librarians' attitudes in a desire for improvements, job performance, and improved career paths (Ford & Kozlowski, 1997; Rae, 2001; Rothwell, 2008). The training should also improve the school librarians' performance to ensure that they achieve the best possible results in their job (Carliner, 2003). This also meets or fulfils their expectations and desires which are related to post-training organizational commitment, academic self-efficacy, physical self-efficacy and motivation to use the training. Training needs to fulfil the

understanding of trainee's expectations and desire through assessment and mutual planning (Tannenbaum, et al, 1991).

A number of studies by Yitzhaki and Anzenberg (2005) and Oberg (2001), find that school librarians are able to optimize their performance in work if they have training in information technology, librarianship, and skills of management, public relations and communication as well as training in pedagogy and familiarity with curriculum development. All this contributes positively to school librarians as potential professional information specialist. This supports to incorporate the need of school librarians into policymaking decisions and integration into the educational system.

In Malaysia, there are two divisions that train school librarians in MoE. The ETD and Teachers Education Division (TED) jointly conduct in-service certifications of school librarians' training in the country. The ETD works together with SETDs and TACs conduct basic and short-term courses such as Basic 35H SRC Management Course and the Advance 45H SRC Management Course. Many of the selected school librarians attend the basic course, followed later by a 45 hours' course.

On the other hand, the TED conducts the Fourteen Weeks In-Service SRC Management Course and One Year In-Service SRC Management Course at the Teachers' Education Institutions. These courses are open to all teachers who submit their applications but teachers who hold school librarian's position in school are given priority. However, recently, TED discontinued the courses due to the lack of applications from school librarians and teachers. Another reason is due to the restructuring process in the ministry, whereby only ETD trains school librarians.

Currently, the MoE does not offer any training continuity in LIS education at diploma or degree levels. The MoE does not have any bilateral collaboration with MoHE to train the school librarians although there are efforts to so. The University of Technology Mara offers Bachelors, Masters and postgraduate degrees in LIS programmes. Other universities such as University of Malaya and International Islamic University offer Masters and postgraduate degrees in LIS programmes. Finally, these teachers cum school librarians are under the jurisdiction of school division although their job responsibilities are under ETD as shown in Figure 2.2.

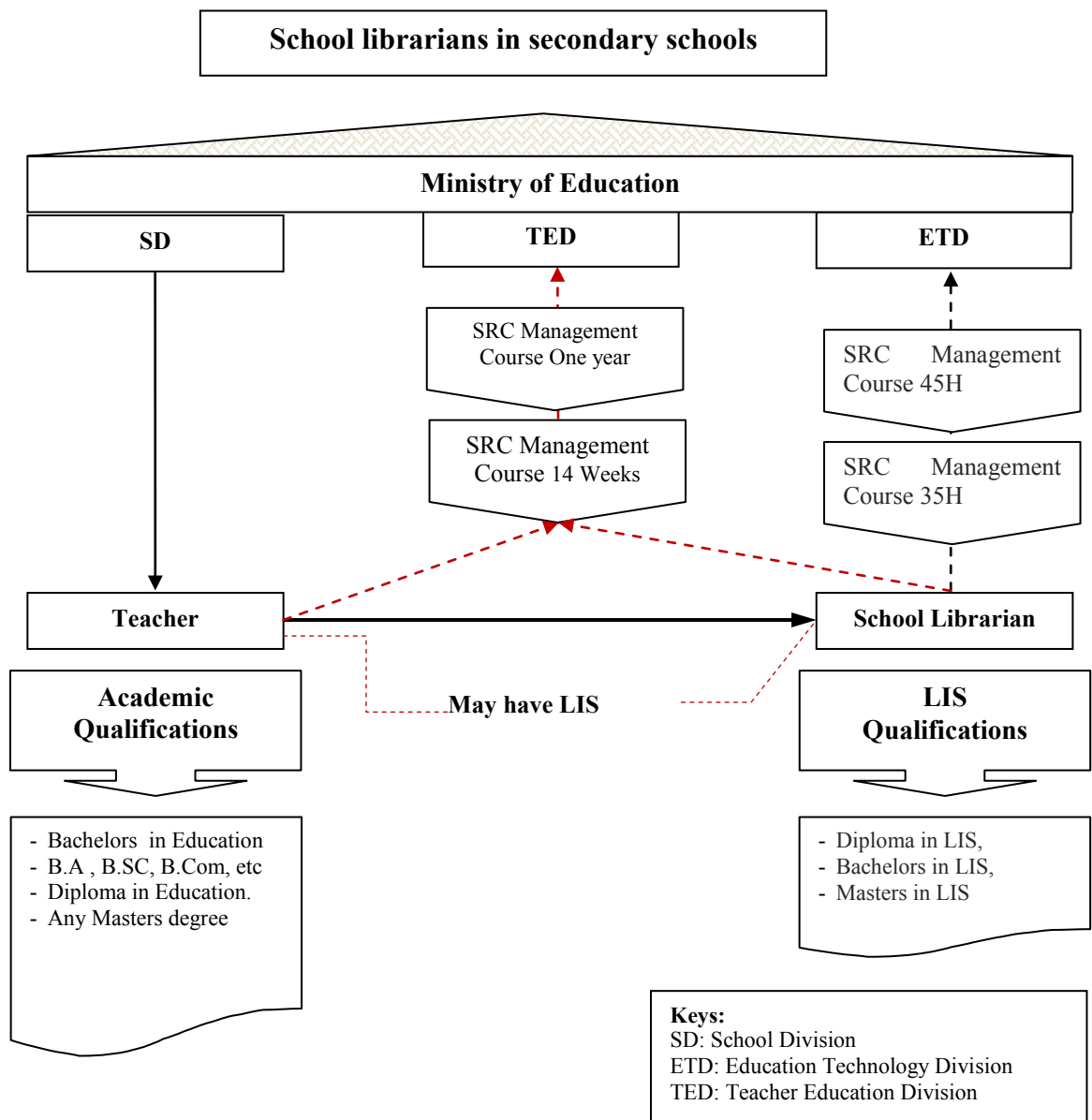


Figure 2.2 School librarians under the management of three divisions in MoE

This arrangement has been there for many years; it creates a centre of attention; attracts criticism and reviews from concern LIS scholars who feel there is a need for uniform syllabuses and standardized methods to provide professional development for school librarians (Lee, et al., 2003; Raja Abdullah & Saidina Omar, 2003; Norhayati,

2009). There is a need for a clear access to LIS and IL continuity motivations and opportunities of professional development.

Since the school librarians, in Malaysia are teachers, the training of these teachers also needs to be taken into consideration. Teacher Education Institutes and the new teachers' training division are also responsible for developing the aspirations and information abilities of teachers entering practice. Williams & Coles (2007), maintain that teachers' education institutes have a role in developing the aspirations and information abilities of teachers entering as potential school librarians.

Singh (1993) points out earlier that school librarians' education and training may need to be improved and innovated so that a common core curriculum can be explored further. This view is supported by Raja Abdullah and Saidina Omar (2003) who claim that school librarians who are professionally trained will, with continuous training, develop realistic expectations related to programme implementation of the school libraries management and services.

A recent study by Kamal & Normah (2012a) involved the Library and Media Teachers' roles in Malaysian School Resource Centre reveal that all schools in Malaysia do not employ full-time and adequately trained professional school librarians. They are without proper professional library or information science training. Further research by them, highlights that school librarian training policy has not been formally instituted and has no standard practices. There is a lack of commitment developing human resource for school libraries. They need continuing education at both information, communication technology and librarianships skills (Kamal & Normah, 2012b).

In Church (2007)'s doctoral research, he recommends that the school librarians preparation programmes for future school librarians should prepare them for their key instructional role. He further recommends that training in this area should be accessible and provided for those school librarians joining or already in the field. Furthermore, Coatney (2006) believes that the government and other relevant stakeholders should offer sponsorship for the training of school librarians.

Certainly, if teachers and school librarians act as initiators and providers, they must model and teach IL skills along with research strategies. Probert (2006), points out that teacher training institutions need to include IL as an integral part of their courses. As the result, the key to IL implementation is through education and lies in school librarians' and teachers' training. Their education programmes have made significant progress in addressing IL and creating a positive attitude and providing explicit teaching skills (Doyle, 1992; Duke & Ward, 2009; Probert, 2006; 2008).

The presence of trained and qualified school librarians in school is critical to the success IL implementation. School librarians with leadership quality consolidated by teaching experience will ensure the integration of IL skills and strategies into the curriculum by collaborating with administrative staff, teachers, students and parents (Eisenberg, 2006). This collaboration creates a school instructional programme that increases learning opportunities and strengthens learning among students. Thus, properly trained school librarians with credential qualifications will establish a solid foundation of IL implementation in schools.

### **2.3.4 Programme Standards for Library and Information Science**

The certification and accreditation of school librarians appeared to have a need for recognition by librarian associations. School librarianship is a profession and so they need a good general education, broad and technical training in the educational and teaching process and a minimum of training in library science. The earliest recognition of school librarians is described by Kuhlman (1938) as such;

“... In our public schools, librarians and teacher librarians are becoming indispensable in proportion as the high schools and elementary schools develop curricula and teaching methods that centred on the library. These people must have: first, a good general education; second, broad and technical training in the educational and teaching process; and third, at least a minimum of training in library economy. They should, in the full sense of the word, be teaching colleagues who can make the teachers' efforts more effective.”

In the United States, school librarians are highly regarded profession in the education development. Most states have different requirements for a person to receive certification. They are: first, certification as a teacher in another subject area before the librarian certification can be obtained. Then, they have appropriate first professional degree either a masters degree from a programme accredited by ALA or a master's degree with a speciality in school librarianship from a programme recognized by AASL in an educational unit accredited by National Council for Accreditation of Teacher Education (NCATE), (American Association of School Librarians, 2011).



Thus, Malaysian school librarians may need some credential or accreditation recognition for their LIS qualifications from MoE and Malaysian Qualifications' Agency. School librarians will be a highly regarded profession in the education development, if there are appropriate LIS program and training accredited by recognised school librarianship association or professional bodies.

The Malaysian Qualifications' Agency (MQA) is responsible assuring the quality of public and private higher education by monitoring and overseeing the quality practices and accreditation of the national higher education. The MQA Act 2007 awarded self-accrediting status to well established higher education institutions with internal quality assurance mechanisms (Malaysian Qualifications' Agency, 2008).

The MQA issue of Programme Standards for LIS as a specific guideline for academic institutions provides the course in this field to fulfil the Malaysian Qualifications' Framework (MQF) requirements. The Programme Standards for LIS is formulated to endorse the development of academic programmes in the field of LIS from diploma to doctoral levels. This includes specific guidelines on programme aims and objectives, programme learning outcomes, programme design (including a proposed programme structure), admission criteria, student assessment, academic staff, educational resources and continuous quality improvement. The panel of experts involved in development of the programme standards represents various stakeholders including the government and private agencies and higher education providers (Malaysian Qualifications' Agency, 2008).

At the same time, *accreditation* is an official recognition that a certificate, diploma or degree programme has achieved the quality standards and criteria compliant with MQA. The accreditation of these programmes provides recognition by government for the purpose of employment in the public sector. MQA is committed to all stakeholders in higher education and that programmes accredited by MQA are quality assured. It also provides the basis for professional parties to recognise the programmes. For example, the Public Service Department (PSD) will use this accreditation status to recognise the qualification for employment in the public service. Professional bodies such as the Board of Engineers Malaysia (BEM) will use the accreditation to recognize engineering graduates for registration as professional engineers (Malaysian Qualifications' Agency, 2008).

On the other hand, the Librarians' Association of Malaysia (LAM) is the professional body but it does not have the empowerment to accredit local LIS graduates. It is an association that develops, promotes and supports Malaysian library and information professionals and institutions in the global knowledge industry. Several LAM's objectives (Persatuan Pustakawan Malaysia, 2011) provide independent professional views and advice on all matters related to the development of libraries, information centres and the profession. It also develops and promotes standards in all aspects of the library and information profession and services. It provides and supports education and training to enhance the knowledge, qualifications and status of members of the profession. In addition, it promotes and monitors legislation affecting the profession and provision of libraries and information services. This includes formulating legislation and working towards its adoption in the development of the library and information profession and services.

Therefore, it appears that there is no professional body to offer any accreditation status to recognise the LIS graduates as professional librarians. School librarians are considerably distant from this accreditation process as in Figure 2.3.

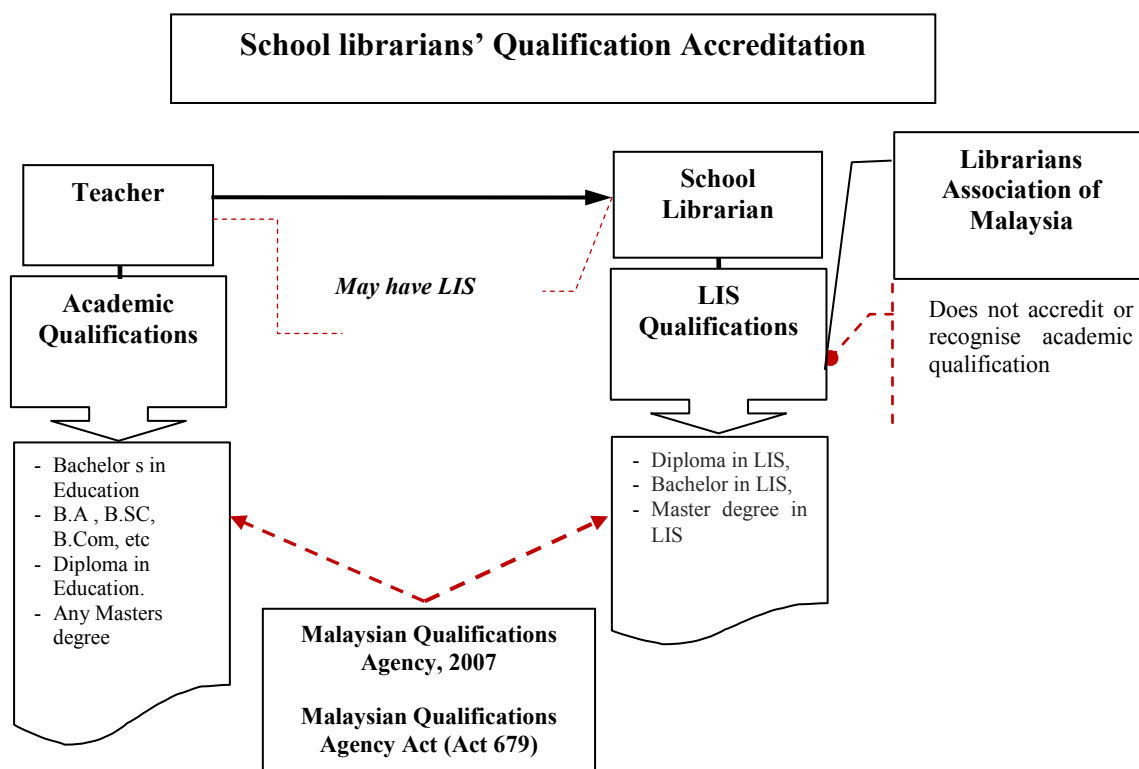


Figure 2.3 School librarians' qualification accreditation

### 2.3.5 School Librarians' Professional Development

Continuing professional development (CPD) describes all the activities in which teachers engage during their career designed to enhance their work (Day & Sachs, 2004b). In the library and information context, it is a process by which library and information specialists maintain a professional competence throughout their careers. In general, professional perspective CPD is a systematic maintenance, improvement and

broadening of knowledge and skills and the development of personal qualities necessary for the execution of professional and technical duties throughout the practitioner's working life (Corrall & Brewerton, 1999).

Therefore, CPD may be essential as teachers and school librarians' education might not contain all the propositional knowledge needed or the practical of 'how to' knowledge that nurtures in practice. This prompts for development as they are now expected to embrace lifelong learning (Knight, 2002). In current educational perspective, Turner (2005) put forward the idea of CPD as "a balance between activities which might satisfy whole school needs and those which address the needs of individual staff." Therefore, the educators' preparation and CPD are the keys to improving learning outcomes through IL (Horton, 2008).

Generally, professional development is a broad range of activities that contribute to the development of teachers, school librarians and support staff to enhance their knowledge and understanding and their skills and abilities to improve the quality of teaching and learning after their initial training (Blandford, 2003; Leberman, McDonald, & Doyle, 2006; Stigler & Hiebert, 2009).

According to Church (2006), school librarians' professional developments are in the format of workshops, in-service opportunities, networking and conference sessions. In practice, professional development is the foundation in any surrounding experience or the process that helps to churn out individuals' aptitude in full potential. Therefore, this covers individuals, schools improvement and the professionalism of this career.

Several researchers have found that school librarians need professional development relating to IL particularly with the information skills aspects in teaching programme, providing a framework of skills for students and with providing practical help for teaching and evaluation information skills (Clyde, 2004, 2005; Probert, 2006; Slyfield, 2001).

However, Williams and Coles (2007) believe that there is a need for more research to examine the extent and nature of the underlying attitudes towards the role of information and the value of IL in professional development. They believe that teacher education institutes are responsible to develop the aspirations and information abilities of teachers on entering the profession, together with further deepening their understanding of the potential of school librarians in supporting their own professional development.

According to Coatney (2006), school librarians are prepared and willing to be self-taught or attend workshops and conferences to enable them to advance in their profession. Belisle (2005) suggests that school librarians share what they have learnt and together with their experiences, they connect within the school communities. Moore & Trebilcock (2003) propose that school librarians can further provide teachers with professional development and teaching assistance. This will enable school librarians to extend the sphere of their influence in supporting the learning of teachers and students.

Several studies have revealed that the education entity may further improve and promote the ongoing professional development for school librarians. The education entity may need to design and create a better school library instructional framework and

IL programmes that may train school librarians to ensure that they are constantly updated information skills to serve their client effectively and improve their professionalism as school librarians (Clyde, 2004, 2005; Vega, 2006). Branch & Farmer (2009) further suggest that the education entity need to develop personal competencies and it is achievable from professional development to complement and expand on their graduate education (Branch & Farmer, 2009).

On the other hand, there are literatures describing school librarians that appear to be in isolation either in their school or district communities (Bainbridge, Carbonaro, & Wolodko, 2002; Campello, 2009b; Farmer, 2007; Turner, Matthews, Ashcroft, & Farrow (2007). According to Lee et al., (2003), the local school librarians integrate well within their school communities in the school libraries programmes, educational programmes and daily activities. They occasionally attend professional developments or networking for school librarians at zone, district and state levels. A few of them may have the fortune to attend workshops or courses at national levels but many of them many need better opportunities to attend the national and international school librarians' communities.

As mentioned earlier, the IL professional development programmes may be the developments that consist of all natural learning experience and planned activities that are intentional, ongoing and systematic. It is a purposeful, intentional process and consciously designed to produce positive change and improvement to individual, group, or school to contribute to quality education. It is a systematic process that may change over an extended period and takes into consideration all levels of the organization. The

complexity of educational improvement demands a systemic approach to IL professional development (Bradley, 1991; Guskey, 2000, 2002).

While the gaps in teaching decrease, school librarians may need to change their attitudes and beliefs, which occur primarily after they gain evidence of improvements in student IL learning based on the Guskey's model of IL teacher change. As suggested by Guskey, (2000, 2002), these improvements typically result from changes these teachers made in their classroom practices following new IL instructional approaches, the use of new materials or curricula, or simply a modification in teaching procedures or classroom format. These experiences change their attitudes and beliefs because they have proven at work that experience shapes their attitudes and beliefs. The evidence is the improvement in the students' learning outcomes (Guskey, 2000, 2002). Therefore, providing IL professional development experience for them aims to improve student-learning outcome through changing teacher attitudes and beliefs (Selby & Probert, 2004).

Leberman et al., (2006) describes professional development, continuing education and in-service training as referring to a broad range of activities that contribute to knowledge, skills and behaviours of individuals once they have completed the initial training. More effort and support should be put in generating and sharing knowledge about teaching in order to improve education (Stigler & Hiebert, 2009). The school librarians require access to ongoing, high quality professional development (Rojtas-Milliner, 2006).

### **2.3.6 Experience of the School Librarians**

School librarians are experienced teachers required to have a minimum of three years' teaching experience (Ketua Pengarah Pelajaran Malaysia, 2005). They are subject teachers (Lee et al, 2003; Nor Hashimah, 2007) and hold the position as school librarians responsible for managing the school library (Abrizah, 1999). They are qualified teachers but have little or limited Library and Information Science qualifications (Raja Abdullah & Saidina Omar, 2003).

William & Coles (2007) mention that school librarians' experience will influence their own professional IL learning. This view is supported by Zepeda (2008) who writes that school librarians' experiences are the dominant source of IL knowledge that possibly needs to be considered as means and strategy to learning opportunities for these teachers. Their prior learning, teaching and school librarian experiences are the main principles for the new IL knowledge (Zepeda, 2008).

Therefore, school librarians' IL experience in ILE is integrated with the combinations of their information skills, knowledge in ILE, application of ILE, their IL instructions/ pedagogy as well as their abilities to develop and perform ILE.

### **2.3.7 School Librarians as Information Literacy Educators**

In schools, school librarians manage school libraries. Several studies show that school librarians are the instructional partner to foster IL educations by providing resources not only for the students but also professional resources and support for teachers (Abrizah & Zainab, 2008; Church, 2007; Li, 2006). They are in the unique position of coordinating IL activities across the curriculum in the libraries and



classrooms. They are also responsible for delivering IL skills in a comprehensive process, systematically and developmentally, to all students in the school. Their knowledge and expertise can facilitate access to information, instructing students on IL competencies, and building a stronger relationship with the school community (Eisenberg, 2003; Julien & Barker, 2009; Novo & Calixto, 2009; Warner, 2008, Subramaniam et al., 2013).

According to Abrizah, (2008), in some way, these are applicable for Malaysian school librarians. They are full-time curriculum teachers and perform as school librarians. They concentrate more on their subject teaching compared to the IL instruction, which is new to most of them. Besides, school librarians are in the unique position of coordinating IL activities across the curriculum, in the school library as well as in the classroom.

Therefore, Abrizah, (2008) maintains that Malaysian school librarians can make a difference in the learning process. It is urged that they work within a wide range of teaching and learning styles to achieve their goals in implementing IL. They develop information literate schools as well as provide professional resources and support for teachers. The collaborations within the school management team and curriculum heads will ensure the success of IL instructions in the school's curriculum plan. These suggestions are ideal and perfect only if these school librarians are armed with IL skills and instructions but most of our school librarians are still new in this area of knowledge.

Several studies revealed that students may lack IL skills in schools. There is no continuity of IL skills from primary through secondary up to tertiary levels where

students learn IL skills only during their undergraduates' studies in Malaysia (Chan, 2003; Edzan, 2008). In contrast, Intan Azura et al, (2008) concludes that IL is incrementally taught and reinforced to students from primary school levels through secondary school levels and right up to tertiary level in Singapore. This is done to ensure continuity in students' learning as well in their application of information skills.

Recent evidence suggests that post-secondary students have low IL proficiency in Canada (Smith et. al, 2013). A study by Smith et al, (2013) produced similar results showing that the IL skills of high school students are insufficient. These students will require even greater support during their transition to post-secondary education. The results indicate that school librarians who are better-prepared in IL instructions are equipped with better skills and so have better understanding of their own students. Therefore, these students presumably embark on post-secondary education with greater IL proficiency. Therefore, Lance et al. (2000b), suggest that school librarians need to view their role as information providers that enhance academic achievement whether school librarians teach IL skills independently or it may be integrated into the curriculum.

### **2.3.8 School Librarians' Information Literacy Competencies**

The school librarians' capability in their IL skills is empirically unknown although it has been suggested that school librarians may need better IL skills to provide services and perform their tasks in the school libraries (Combes, 2008; Tan, Gorman & Singh, 2012). Research by Smith (2013), found that secondary teachers are confused about the phrase of 'information literacy' and are ill-prepared to instruct IL effectively.

These literatures indicate that the functions of school librarians continue to evolve as the need for IL increases (Blevins, 2004; Church, 2007). If IL is essential, they are convinced it has value for students and teachers. They are required to acquire and comprehend the IL skills as well as knowledge in order to assist, provide, and teach IL in schools (Morizio & Henri, 2003).

Therefore, it is a challenge to develop competent and committed school librarians locally in acquiring new skills and competencies across disparities in technological and intellectual disciplines in this new learning paradigm (Sit, 2003). Their IL skills for the construction and maintenance of the school library programmes as well as ensuring the collaboration works with classroom teachers for the implementation IL in schools is very important (Bastos, 2006).

#### **2.4 Studies on Information Literacy Education Implementation**

In the earlier discussions, Abrizah (2008) claims that there is evidence that ILE is embedded and integrated in the Malaysian curriculum but it is unclear about the present position of IL implementation in schools. In other studies, Edzan (2008) and Edzan & Mohd Sharif (2005b) conclude that IL policy is important in IL implementation. They view that the education may need a standardized IL framework at the national, higher learning institution and school levels, which consists of principles, standards and practices that support ILE in all sectors. Both researchers maintain that there is a need to formulate and establish a national IL agenda or NILA with the collaboration of all stakeholders at all levels.

Accordingly, policy remains the central contributing factor in ILE implementation. IL policy is essential as the guide and route in creating an informed society. Thus, without it, IL implementation will relapse aimlessly. As the Prague declaration, “Towards an Information Literate Society,” already recommended that IL be included within the United Nations Literacy Decade (2003–2012). Based on the Prague declaration six basic IL principles, the three principles below affirmed that the government should be involved in realizing IL into practice.

Principle 2: IL encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning.

Principle 3: IL, in conjunction with access to essential information and effective use of information and communication technologies, plays a leading role in reducing the inequities within and among countries and people and in promoting tolerance and mutual understanding through information use in multicultural and multilingual contexts.

Principle 4: Governments should develop strong interdisciplinary programs to promote IL nationwide as a necessary step in closing the digital divide through the creation of an information literate citizenry, an effective civil society and a competitive workforce (Horton & Keiser, 2008; Horton, 2008).

As Malaysia is a multi racial, multi-cultural and multi-lingual society, ILE may be an essential tool to educate every citizen to retrieve and assimilate information using ICT in the process of building equality and tolerance in the social diversity society. Every individual in the country should be able to create, access, utilize and share information and knowledge, enabling individual, community and people to attain lifelong learning (Abid, 2004). This is a part of the basic human right of lifelong learning for every citizen to develop in an information literate society.

Hence, in the process of building an information literate nation, ILE is a concern to all sectors of society and should be tailored by each sector to its specific needs and context. It may need all the stakeholders with political power or authority *in* MoHE and MoE (MoHE and MoE merge became MoE in 2013), other ministries to collaborate to share the same vision in order to bring forward a practical IL policy and IL agenda that pave the way for ILE implementations. The government and education stakeholders' prerequisite plan puts in order the national IL policy in the education policy.

ILE implementation may be an integral part of Education of All, which contributes critically to the achievement of the United Nations Millennium Development Goals and displays respect for the Universal Declaration of Human Rights (Horton & Keiser, 2008). The policy maker and stakeholders, governments may develop strong inter-disciplinary programmes to promote IL nationwide as a necessary step in closing the digital divide through the creation of an information literate citizenry, an effective civil society and a competitive workforce (Horton & Keiser, 2008).

An Information Society is the essential and fundamental basic to social, cultural and economic development of nations and communities, institutions and individuals in the 21st century and beyond. Lonsdale & Armstrong, 2006) points out that without national information agenda; there is no link to inter-disciplinary programmes to create cross-sectored collaboration. This 'gap' needs to be addressed to ensure the transfer of information skills and abilities by all interested bodies.

As Bruce (2002) claims that in order to establish IL policy and guidelines, the government should begin with adopting international and national policies and guidelines available. It is based on the need for an IL programmes in schools which need to take into the consideration the basic information technology infrastructure. The establishment of IL programmes, guidelines and policies for teacher education may be accomplished along with the National policies and guidelines targeting ILE and associate infrastructure in the wider community and can only support such an emphasis on the educational system.

Considerable amounts of literature have been published on IL for school librarians. These studies reveal that many countries have different policy statements or professional policies for school librarians from different school library associations (Bruce, 2002, Morizio & Henri, 2003, Russell, 2005). As IL may be a core pre-occupation for the school authority, there is no way for the school librarian to convince subjects' teachers of its importance for the students' personal growth. Different countries share similar experiences where information policy is planned at national levels. Hong Kong's experience is in need of IL policy at school levels (Henri, et al., 2006).

The Turkish education system has a national policy on teaching IL skills. This national policy provides a framework for how libraries provide information services and products (Önal, 2006). They recognise the importance of IL policies as a means to shape and develop school libraries. In Canada, the IL policy in Ontario public schools has been developed largely by the influence of advocates from the teacher-librarian community but MoE responds negatively to IL policy and commitment to IL programs, school libraries and school librarians' positions (Russell, 2005). However, in South East Asia, a research by Singh et al. (2006b), which focuses on the state of IL education in 2006, reveals that only between 16% and 58% of the respondents indicate that their school had a policy statement on IL but none of them provides a written copy.

Studies reveal that IL is crucial to a full education (Abdelaziz, 2004, Horton, 2006, Williams, 2008). By having an IL policy, it would make differences in the preparation of students' education. This is the preparation of students for an adult life. Boekhorst (2003) points out that the process of becoming information literate initiates at primary school level and is a part of formal training and education at all phases and in all subject areas as preparation for lifelong learning. Thus, according to Oldford (2002), the policy makers have to consider whether classroom teachers alone can implement these new curricula and policies or fully incorporate the underlying philosophy of IL, resource based learning and technological competency.

Both Bruce (2002) and Edzan (2008) emphasize that the implementation of IL requires a national IL policy as a solid foundation towards implementing IL in schools to start with. Singh, et al., (2006a) highlight that all individuals in school libraries share

out the contributions and deliver the knowledge acquired in the library- related activities including IL courses. All these required strong foundation with qualified teachers and librarian, information technologies facilities and sufficient library collections. These are the main factors of inculcating the teaching of IL. In order to promote school teaching IL, support from national education policy and the Ministry of Education is needed.

The initial IL standards are established in United States, the Information power: Building partnerships for learning (American Association of School Librarians and Association for Educational Communications and Technology, 1998). It recommends a conceptual framework and broad guidelines in three categories: IL, independent learning and social responsibility. Within the three categories are nine standards and 29 indicators to describe the content and processes students needed to achieve to be information literate (Eisenberg, et al., 2004). The Information Power specifies the following indicators to support these standards (Bailey, 2005):

- Recognizes the need of information
- Recognizes that accurate and comprehensive information is the basis for intelligent decision making;
- Formulates questions based on information needs;
- Identifies a variety of potential sources of information;
- Develops and uses successful strategies for locating information

(American Association of School Librarians and Association for Educational Communications and Technology [AASL/AECT], 1998)

This IL standard outlines the guidelines for the application of IL skills. It is too used as operational variables in various contexts.



A new set of revised IL standards, Standards for the 21st-Century Learner (American Association of School Librarians [AASL], 2007), introduced compilation of common beliefs and four categories framed with statement, learner-use skills, resources and tools (Aiani, 2008) to:

- a. Inquire, think critically and gain knowledge
- b. Draw conclusions and make informed decisions, apply knowledge to new situation and create new knowledge
- c. Share knowledge and participate ethically and productively as members of our democratic society
- d. Pursue personal and aesthetic growth

These statements clarify that IL skills are essential for student learning. In order to teach students, school librarians need to be information literate to be able to facilitate and teaching IL skills to students.

The Student IL Needs in the 21<sup>st</sup> Century, Competencies for Teacher-Librarians (Association for Teacher-librarianship in Canada (ATLC) and the Canadian School Library Association (CSLA), 1997) present a series of guidelines for school librarians' competencies including IL competencies:

- has expert knowledge in evaluating learning resources in different formats and media, both on-site and remote, to support the instructional programme;
- develops and promotes the effective use of informational and imaginative resources in all formats through cooperative professional activities;
- provides appropriate information, resources or instructions to satisfy the needs of individuals and groups;
- uses appropriate information technology to acquire, organize and disseminate information.

Locally, the IL standard seems to be absent in any documentation. The Standard and Guidelines for the SRCs in Malaysia provided guiding principles to schools to fulfil the educational services with the development of ICT (Fatimah, 2002). This document, however, excluded IL standard and guidelines for the school librarians or students. There may be not any national IL standard with the relevant performance indicators and learning outcomes (Edzan & Mohd Sharif, 2005a) in the Malaysian education context.

All these standards emphasized IL as a key part of the desired student learning. IL is affirmed as the foundation of lifelong learning (Bailey, 2005). They have a relatively high level of endorsement among school librarians, as references and guidelines for IL curriculum and instruction of students. It may become the baseline for school librarianship preparation programmes. School librarians have the opportunity of basing their curriculum towards IL instructions for students and collaboration with teachers (Cornelius, 2009). Without IL standards, the groundwork and foundations of implementation of IL is likely to be inequitable. Implementation of IL is akin to building sandcastle without concrete foundations.

For the reason that ILE is established in North America, the researcher reviews more North American IL standards. As mentioned in Chapter one (Section 1.3.1; page 5), there are several IL models being suggested as reference by ETD, MoE. The ETD also suggested both Information literacy standards for student learning (American Association of School Librarians [AASL], 1998) and Standards for the 21st-Century Learner (American Association of School Librarians [AASL], 2007) as references for the local school librarians.

From the earlier IL studies, Doyle (1992) emphasizes that school librarians are the expert in source of information but they also need to collaborate in attaining instructions objectives. Montiel-Overall (2005) describes collaboration as “a trusting, working relationship between two or more equal participants involved in shared thinking, shared planning and shared creation of integrated instruction”. Through collaboration of teachers and school librarians, they require joint efforts through sharing vision and objectives in curriculum integration, creating students learning opportunities in order to improve students’ learning. Later Montiel-Overall & Grimes (2013) found that teachers can be taught to be effective collaborators and to use recommended innovative teaching strategies to improve content instruction, specifically inquiry-based science and IL instruction. Therefore, the collaboration of school librarians with the teachers and administrators, including principals, will determine the success of IL implementation in school.

Several studies indicate that school librarians are at the frontline in practising collaborative planning, teaching and evaluating with teachers to support students' learning in curricular areas and in developing IL skills. These studies reveal that school librarians contribute positively to student achievement (Haycock, 2003; Hockersmith, 2010; Lance & Loertscher, 2005; Montiel-Overall, 2005; Warner, 2008). This is supported by Campello (2009b) that school librarians collaborate, as they realised their educational practices could not leave out the teachers. Their major roles are to educate students to become independent lifelong learners (Asselin & Naslund, 2000).

In her study, Asselin (2001) finds that a minority of teachers participate in valuable collaboration. She agreed that it is important that teachers and school librarians

perceive similar amounts of high and low collaborative uses of the school library. Intan Azura & Shaheen (2006), reveal a similar opinion that the collaborative relationship between teachers and school librarians is very low though teachers viewed the school librarians as an educational partner who could add value to the school curriculum.

Teachers and school librarians have to collaborate on planning lessons and learning activities. Successful collaboration would share both the expertise of both professionals in curriculum experience and pedagogical competencies of teachers as well as library skills and knowledge of the school librarians. However, Mardis (2006), views that teachers who became school librarians have better curriculum knowledge and classroom management in order to provide supporting and instructional partnering roles to teachers.

According to Intan Azura, Shaheen, & Foo (2007), school librarians and teachers are generally willing to collaborate to provide encouraging learning opportunities for students to utilize IL skills in addition to monitoring and supervising students' progress and application of IL skills. However, certain obstacles need to be resolved such as fixed schedules, administrative attitudes, and teacher apathy.

Hockersmith (2010) indicates that school librarians who actively engage in effective collaborations contribute to increased student achievement. He also indicates that pre-service teachers are not prepared to understand school librarians' roles and they are seldom discussed in teacher education programmes. Another researcher Bailey (2005) finds that teacher and school librarians do not work collaboratively in integrating

IL skills into the students learning or incorporating IL skills into the school library programmes.

Furthermore, Haycock (2007) adds that the theme ‘lack of acceptance of collaboration’ as a norm of teacher behaviour is also a common theme in the library science journal and publication. Sadly, these school librarians read it themselves without voicing out the needs of collaboration to teachers. Therefore, the collaboration of teachers and school librarians is a two-way communication and there is a need for connections to build the collaborations. It would benefit both students and teachers.

It is crucial and necessary to begin with building relationship within the school communities. Pratschler (2007) claims that established relationships would form recognition of school librarians as collaborators in positive manners. Therefore, collaborations are not solely a function of teacher interest, personal characteristic, or communicating to learning.

According to Williams & Wavell (2002), confirms that the teachers and school librarians’ collaboration based on shared educational and learning goals have added knowledge and affected learners’ experience. Miller (2005) thinks that teachers should understand, recognize and access the potential for collaboration to implement IL in any attempt to raise awareness to work together, in advocacy, to promote better understanding of school librarian roles in order to promote the implementation of IL in schools. Then, Haycock (2007), both teachers and school librarians need to be educated and trained in effective collaboration and develop professional and personal commitments to teachers’ partnerships.

Several studies have revealed that principals are unaware of or understand school librarians' roles or support school librarians as a collaborator with classroom teachers in students' learning (Hartzell, 2002; Morris & Packard, 2007). Hockersmith (2010) is of the view that the school principal hardly ever understands the instructional roles and the value-added potential of the school librarians. According to Hartzell (2002), the principals have only a limited and inaccurate understanding of libraries and school librarians. Obviously, the principals' own experiences in school libraries as children by which they perceived the library as unimportant to the classroom. Moreover, the school library role in curriculum and instructions are missing in their professional training. It ends up that principals do not value the potential of school library programmes as contributing to academic achievements. Principals are the instructional leaders who guide teachers in their teaching roles in schools but Morris and Packard (2007) view that usually they are unaware that they need to support the school librarians as a collaborator with classroom teachers in the learning process.

In addition, research by Yitzhaki and Anzenberg (2005) found that Israeli high school principals, teachers, and school librarians do not realize that collaboration between the teacher and school librarian is crucial to the success of a school library. Their roles as advisor on education and instruction and teacher are yet to be utilized. Principals and teachers are unaware of school librarians' roles. They fail to recognise the importance of the school libraries and school librarians.

Similar findings from Kaplan (2006) and Church (2007) indicate that the principal received little or no information concerning the role of school library

programmes in their preparation coursework. The principals' perception and understanding of the role of school library programmes and school librarians in the school developed from their interactions and experience. In Kaplan's (2006), research finds that many schools administrators hardly have any time to consider how school librarians function in instructional roles. She proposes a professional development programme for pre-service and in-service school principals that will help principals to become aware of the instructional role of the school library programmes in the school curriculum in order to raise their knowledge of school librarians' roles in school library.

Significantly, the principal's support is the channel to successful collaboration between classroom teachers and school librarians. The principal can create or break the collaborative efforts. Principals may support the collaboration both vocally and administratively in schools if they want collaboration to take place successfully in schools community (Morris, 2007; Morris & Packard, 2007).

On the other hand, school librarians need to make known to the principals about their unique and collaborative contributions to students' success. They need to collaborate and align their efforts with the school's mission and the principal's vision since principals are the major chief catalysts for collaboration (Farmer, 2007). Church (2007) verifies and affirms that principals usually expect school librarians to be the primary initiators of collaboration within their schools. Principals strongly endorse the role of school librarians as teachers of IL skills and as instructional partner. They place primary responsibility for initiation of collaboration at both the individual teacher and school level with the school librarians.

Thus, Shannon (2009), points out that the principals should consider activities related to material provision and reference assistance to be more important than collaboration, planning with teachers and curriculum development. However, she stresses that the positive impact of school library programmes on student achievement will fail without the strong partnership between the school's principal and the school librarians. The principals' positive perspectives of and priorities for the school library programmes bring together school community support.

Therefore, the principals' support and their collaboration will inspire more successful school library programmes as well as IL instructions in school libraries. Their collaboration with school librarians will create optimistic learning process and academic achievement in schools.

Generally, most school libraries are equipped with information infrastructures. Abrizah, 2008 mentions that most secondary schools in Malaysia are equipped with the modern ICT to facilitate the students learning opportunities. The government spends substantial amounts of funds on the development of ICT infrastructure to develop concrete base for successful extensive use of this ICT in schools. School libraries provide access IL for a new generation of citizens (Singh, et al., 2006a). In 2013, the government allocated RM168 million (Ministry of Finance, 2013) to expand the Internet access in schools especially in rural areas. This will further improve on the urgent repairs and maintenance of school buildings especially school libraries.

Schools and school libraries equip with infrastructures can contribute to the success and advancement of the IL implementation in achieving a whole school literacy



approach (Henri, Boyd, & Eyre, 2002; Williams & Wavell, 2002). Thus, the key implementation of IL involves experiences of information use in the classroom and creating opportunities for critical reflection on the learning process to foster awareness in learners of what they have learned. The IL education programmes need to have information technology infrastructure in school (Bruce, 2002).

Furthermore, Combes (2005) agrees that school librarians have the overarching curriculum knowledge, the collaborative background as well as manages curriculum resources across the school. They are ideally the key persons to support teaching programmes in schools. Together with the technology infrastructures in schools, they can provide a dynamic learning environment where students adapt and are equipped with necessary skills using the information technologies.

Still, a strong-networked information technology infrastructure will ideally facilitate the usage of information resources in schools and beyond (Todd, 2008) but to make progress in education is not merely to acquire more hardware and expand the infrastructures network. The modern information communication and technologies are essential applications to foster information background of the actual learning process (Harada, 2003). Nevertheless, Intan Azura, et al., (2008) views that modern schools equipped with advanced technological infrastructure do not automatically link to the students and so teachers have to be skilful to utilize technology tools as information literate individuals. Both students and teachers will only gain from their learning when IL instructions are perfectly integrated with the use of technology.

On the other hand, in order to incorporate IL contents in the school curriculum, it is necessary to transform the school culture and conception of learning and to improve the information infrastructure (Campello, 2009a). Williams and Coles (2007) supports with the reality that IL implementation was held back due to the under-developed information infrastructure in schools in United Kingdom. Although the Internet-based research sources adapted towards teachers' needs were widely available, the multiplicity of sources caused barriers or affect confidence in seeking as well as using information.

Therefore, similar findings show that technical information infrastructure may directly affect the lack of references to IL in strategic documents, including the general national information and educational policy (Lasic-Lazic, Spiranec, & Banek-Zorica, 2006). Infrastructure may remain a setback in some countries in the ILE implementation.

### **Summary**

There have been an abundance of studies focussing on IL in school. Table 2.3 summaries the key covered by the literature.

Table 2.3 Key Studies on IL Implementation

Issues	Operational	Research
<b>1. General perception</b>	Implementation of IL in schools	
<b>2. Readiness</b>	<p>Readiness is focused on the eagerness to learn skills, concepts and attitude for the betterment of the school librarians.</p> <ul style="list-style-type: none"> <li>when school librarians are able to face the circumstances that require them to use the new knowledge, skills or abilities</li> </ul>	McCain and Tobey (2004), Fogarty, Fogarty, & Pete (2004)
<ul style="list-style-type: none"> <li>Knowledge about IL</li> </ul>	<ul style="list-style-type: none"> <li>IL concept (definition and can be learned)</li> <li>Information literate attributes</li> </ul>	<p>Diao &amp; Chandrawati (2005), Education Technology Division (2005), Norhayati, Nor Azilah, &amp; Mona (2006), Probert (2009), Norhayati (2009), Che Normadiah (2001), Singh, et al., (2006)</p> <p>Carr (1998), Yusoff (2006), Rader (1991)</p>
<ul style="list-style-type: none"> <li>IL skills</li> </ul>	<ul style="list-style-type: none"> <li>Self assessed information literacy skills.</li> </ul>	Combes (2008), McCoy (2001), Tan & Singh (2008), Hockersmith (2010), Church, (2008), Gbaje (2008), Novo & Calixto (2009), Reed (2009), Tan, Gorman & Singh, (2012), Blevins (2004) Church (2007), Morizio & Henri (2003), Sit, (2003), Bastos, (2006).
<ul style="list-style-type: none"> <li>Attitude –role as IL educator</li> </ul>	<ul style="list-style-type: none"> <li>Perception about School Librarians' roles</li> </ul>	Hockersmith (2010), Church (2008), Gbaje (2008), Novo & Calixto (2009), Reed (2009), Lee, Reed & Lavery (2012), Bahagian Teknologi Pendidikan (2007), Fatimah (2002), Yusoff (2006), Education Technology Division (2005), McCracken (2001), Morizio & Henri (2003), Singh et. al., (2006), AASL/AECT (1998), Raja Abdullah & Saidina Omar (2003), Abrizah (1999), Intan Azura et al., (2007), Branch & De Groot (2009), Kamal & Normah (2012).

Table 2.3 Continued

Issues	Operational	Research
<b>3. Implementation</b>	Factors affecting IL Implementation	
<ul style="list-style-type: none"> <li><b>IL Policies</b></li> </ul>	<ul style="list-style-type: none"> <li>An ILE guideline for School librarians.</li> <li>An ILE policy for School librarians.</li> <li>A national IL agenda.</li> </ul>	Edzan (2008), Edzan & Mohd Sharif (2005), Horton & Keiser (2008), Horton (2008), Abid (2004), Horton & Keiser (2008) Lonsdale & Armstrong (2006), Bruce (2002), Morizio & Henri (2003), Henri, et al., (2006), Önal (2006), Russell (2005), Singh, et al., (2006), Williams (2008), Boekhorst (2003), Oldford (2002)
<ul style="list-style-type: none"> <li><b>IL Standards</b></li> </ul>	<ul style="list-style-type: none"> <li>National IL standard.</li> <li>IL standards for students.</li> </ul>	Eisenberg, et al., (2004). Bailey (2005), Aiani, (2008), Fatimah (2002), Edzan & Mohd Sharif (2005), Bailey (2005), Cornelius (2009), American Association of School Librarians and Association for Educational Communications and Technology (1998), American Association of School Librarians [AASL] (2007), Association for Teacher-librarianship in Canada (ATLC) and the Canadian School Library Association (CSLA) (1997),
<ul style="list-style-type: none"> <li><b>SL Training Curriculum</b></li> </ul>	<ul style="list-style-type: none"> <li>School librarians IL training.</li> <li>School librarians' standardized IL training modules.</li> <li>School librarians' standardized IL training curriculum.</li> <li>School librarians' continuing education opportunities in LIS.</li> <li>School librarians' LIS certification.</li> </ul>	Dearden (1984), Buckley and Caple (1990), Ford & Kozlowski (1997), Rae (2001), Rothwell (2008), Carliner (2003), Tannenbaum et al, (1991), Lee, et al., (2003), Norhayati (2009), Raja Abdullah & Saidina Omar (2003), Williams & Coles (2007), Church (2007), Coatney (2006), Yitzhaki and Anzenberg (2005), Oberg (2001), Probert (2006), Doyle (1992), Duke & Ward (2009), Probert (2006), Probert 2008), Eisenberg (2006).

Table 2.3 Continued

Issues	Operational	Research
<ul style="list-style-type: none"> <li><b>SLs' Teaching Requirements</b></li> </ul>	<b>IL courses</b> <ul style="list-style-type: none"> <li>School librarians' IL courses.</li> </ul>	Merchant & Hepworth (2002),ETD (2005), Tan & Singh (2008a), Norhayati (2009), Fatimah (2002), Doyle (1992) , Horton (2008), Bushong and Buff (2008) , Asselin (2004).
	<b>IL professional development</b> <ul style="list-style-type: none"> <li>School librarians' IL professional development.</li> <li>School librarians' IL instruction (pedagogy).</li> </ul>	Blandford (2003), Leberman et al, (2006), Stigler & Hiebert, (2009), Church (2006), lyde (2004, 2005), Probert (2006), Slyfield (2001), Coatney (2006), Belisle (2005), Moore & Trebilcock (2003), Williams and Coles (2007), Clyde (2004, 2005), Vega (2006), Branch & Farmer (2009), Farmer (2007), Oldford (2002).
	<b>Collaboration</b> <ul style="list-style-type: none"> <li>School librarians collaborate to teach IL in classroom.</li> </ul>	Doyle (1992), Montiel-Overall (2005), Shaheen (2006), Intan Azura, Shaheen & Foo, 2007, Hockersmith (2010), Bailey (2005), Haycock (2007), Pratschler (2007),Miller, 2005)
	<b>IL curriculum</b> <ul style="list-style-type: none"> <li>Implement IL in the education curriculum.</li> <li>Integrate IL into curriculum within subjects.</li> <li>Integrate IL into the ICTL subject.</li> <li>Teach IL as a set of library-based skills.</li> <li>Teach IL in the school resource centre.</li> <li>Teach IL as a separate subject within the school curriculum.</li> </ul>	Singh, Choovong, Cheunwattana, Guaysuwan, & David (2006a), Abrizah (2008), Che Normadiah (2001), Education Technology Division(2005), Edzan (2008), Fatimah, (2002), Mohamad & Mohd Darus (2006), Mohamad, Mohd Darus, & Fadzil (2006), Musa (2002), Yusoff (2006), Henri, Kong, Lee, & Li (2006), Intan Azura, Shaheen & Foo (2008), Horton (2008), (Bruce, 2004).
<ul style="list-style-type: none"> <li>Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>IT facilities</li> <li>Libraries as information centres</li> </ul>	Abrizah (2008), Singh, et al., (2006), Henri, Boyd and Eyre (2002), Williams & Wavell (2002), Bruce (2002), Combes (2005), Todd (2008), Harada (2003), Intan Azura, et al,(2008), Campello (2009a), Williams and Coles(2007), Lasic-Lazic, Spiranec and Banek-Zorica (2006).

Literatures have shown several organizational factors contribute to the ILE implementation, which includes policies, standards, curriculum, school librarians'

requirements and infrastructure. There has been no attempt to study these factors in a single study. Both the school librarian and the external environment may collectively influence the successful implementation of IL in schools.

## **2.5 Experiential Learning Theory**

The notion of “experiential learning” originated from the work of Dewey, Lewin and Piaget (Kolb, et al., 2000; Miettinen, 2000). Kolb’s experiential learning theory describes learning as “the process whereby knowledge is created through the transformation of experience”. Experience is not knowledge, but only a foundation for the creation of knowledge (Illeris, 2009). Knowledge results from the “combination of grasping and transforming experience” (Kolb, 1984). Thus, the school librarians’ experience is the foundation for the creation of knowledge. They transform their experience into knowledge.

The theory emphasizes that experience plays a fundamental role in the school librarians’ learning process and integrate the perspectives on learning that combines experience, perception, cognition and behaviour (Kolb & Kolb, 2008; Kolb, 1984). The theory offers different recommendations for the conduct of education, the proper relationship among learning, work and other life activities and the creation of knowledge itself (Kolb, 1984).

According to Illeris (2009), Kolb’s experiential learning theory describes two aspects in his learning cycle. First, the school librarians’ concrete and immediate experiences are valuable for creating meaning in learning and validating the learning process. Second, the information provided by feedback is the starting point of a

continuous process consisting of goal-directed action and evaluation of the consequences of this action.

Kolb (1984) describes each learning style in a different form of adaptation. A particular individual ability or learning style corresponds with each individual stage. If they are successful learners, they may need four different kinds of abilities – concrete experience abilities, reflective observation abilities, abstract conceptualization abilities, and active experimentation abilities (Illeris, 2009; Kolb, 1984). Therefore, Kolb's experiential learning theory provides a link between theory and practice, between abstract generalisations and concrete experiences as well as between the affective and cognitive domains. It provides linkages among school librarians' education, work and personal development as shown in Figure 2.4 (Zuber-Skerritt, 1994).

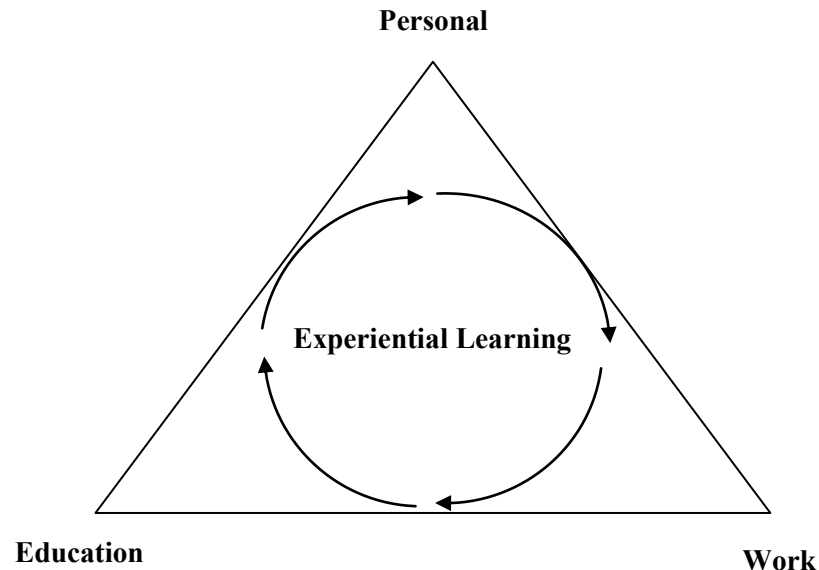


Figure 2.4 Experiential learning as the process that links education, work and personal development (Kolb, 1984)

According to Farmer (2007), the school librarians' experiences differ from the new first and second year school librarians. New school librarians are more involved with daily operations such as textbook management (particularly in the U.S.) while the second year school librarians' focus on their relationships with the rest of school community. At the same time, more experienced school librarians do more planning (including collection development), instruction and readers' advisory; they demonstrate longer-term perspective and collaborative attitude.

The researcher uses the same concept based on the Experiential Learning Model which has two complementary dimensions: grasping information and then transforming that information (Roberts, 2006). Based on the first "Concrete IL Experience" the mode involves school librarians' new experience with the assumption that they are familiar with IL skills. School librarians understand and define the information and identify the information problem. School librarians use their senses (read, hear, view, touch) to understand the information source and extract information from a source.

The second stage, the "Reflective IL Observation" mode explores the meaning of content related to the determination of the range of possible sources. The school librarians reflect on what they experience. They determine the range of possible sources. Here, they evaluate the different possible sources to determine priorities. Mentally, they establish the sources of information and retrieve information within the sources (determine and locate).

Thus, the researcher adapts and utilizes the Kolb's experiential learning theory (Kolb & Kolb, 2008; Kolb, 1984; Kolb, Boyatzis, & Mainemelis, 2000; Kolb &



Plovnick, 1974) to illustrate and justify that school librarians make full use of their experience to smoothen their learning process.

## **2.6 Conceptual Framework of the study**

The conceptual framework is the conceptual status of things being studied and their relationship to each other. It emerged from the literature (Punch, 2006) and linked the existing literature as used as a tool to guide the research objectives. The literature helped the researcher to identify issues relating to school librarians' readiness and other organizational factors influencing the IL implementation.

The conceptual framework developed base on the assumption of school librarians as adult professionals. They can understand adults' life situations and readiness in their profession. McCain and Tobey (2004) described the presence of readiness when school librarians are able to face the circumstances that require them to use the new knowledge, skills, or abilities. Their readiness involves a wide range of aspects such as skills, social, affective, capabilities, experience, intellectual, interest, knowledge, and physical aspects in order to understand certain fundamental principles. They are to accomplish a specific work task and their readiness related to their abilities and willingness as well as to requisite knowledge and skills to perform the tasks which leads to the accomplishment of the educational organization's goals (Hersey, Blanchard, & Johnson, 2001; Strohschen & Elazier, 2009).

School librarians' readiness is life-related which includes their ICT knowledge, teaching experiences, management experiences, capabilities in teaching ILE. Therefore, the IL knowledge includes knowing ILE, using ILE, teaching ILE, and performing ILE.

These are their basic qualifications and knowledge. Experiential theory describes that knowledge is created through transformation of experience. School librarians transform their experience into knowledge. The experiential theory provides linkages between their education, work, and personal development (Zuber-Skerritt, 1994). Thus, the researcher investigates both qualification and experience as factors that may influence school librarians' readiness to implement IL.

Therefore, this framework helped in investigating the school librarians' perceptions because the way readiness is being perceived involves their knowledge and capabilities to provide ILE. The researcher investigates the school librarians' readiness based on their perception about IL, the information literate attributes, school librarians' roles, and their self-assessed IL skills. Therefore, the readiness of the school librarians strengthens and consolidates the core of IL implementation.

On the other hand, the literature revealed that the external factors are the organizational components. There are five organizational factors involved in the IL implementation. These are policies, standards, curriculum, school librarians' requirements, and infrastructure to support IL implementation.

The policies include IL policies, guidelines and a national IL agenda. It also provides national information literacy standard and IL standard for students.

The organization's role is also to prepare and support the school librarians' requirements that provide them the opportunities to acquire LIS certifications, IL training, curriculum and modules and LIS continuing education opportunities for them.

The organization decides on curriculum issues which include ways to implement IL in schools. The implementation involves implementing IL into education curriculum, integration, teaching as a separate subject, which is a library- based subject, teaching in SRC or integration into ICTL subject. The organization also provides IL courses, professional development, IL instructions (pedagogy) courses for school librarians. The organization also provides information technologies and school libraries as the infrastructure foundation of the information centres.

Successful IL implementation depends on organization's decisions or external factors to provide IL policies and standards, provide the curriculum, decide on school librarians' requirements and provide infrastructure to accomplish the IL implementations.

As the result, the researcher proposed a conceptual framework as shown in Figure 2.5. The school librarians' readiness forms the basic need of IL implementation. It is supported, facilitated and complement by organizational factors. The organizational factors are the administrative structures that facilitate policies, standards, curriculum, school librarians' requirements, and infrastructure of the IL implementation.

## Information Literacy Implementation Readiness Framework

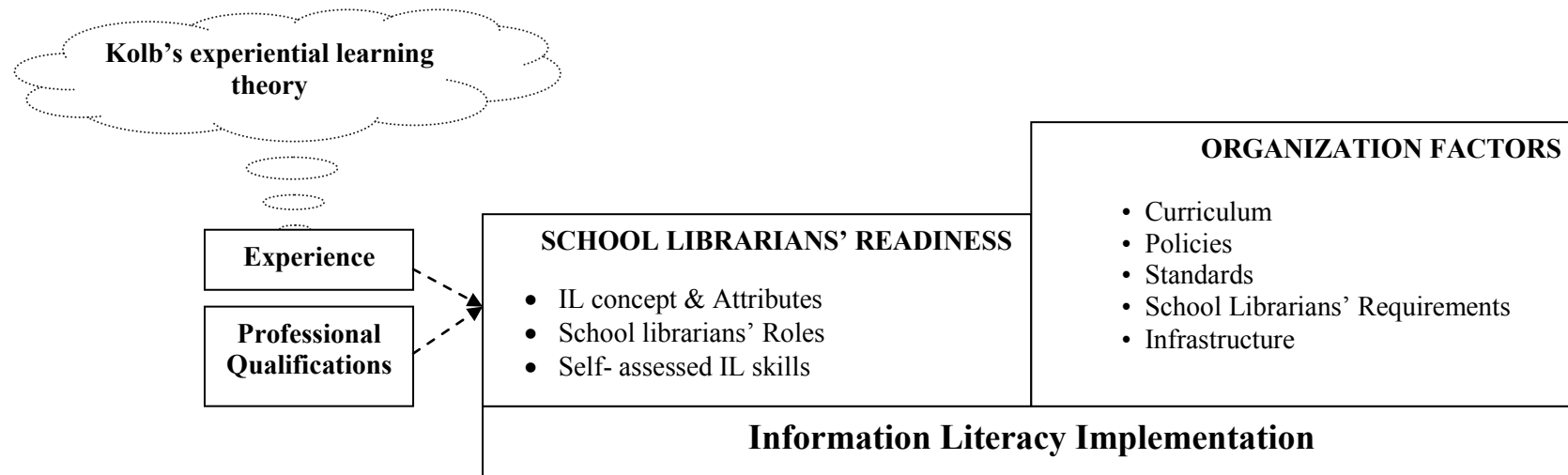


Figure 2.5 Conceptual Framework of the Study

## **Summary of the Chapter**

The successful ILE implementation depends on school librarians' readiness and organization factors. The school librarians' readiness includes cognitive, functional and technical readiness; all these needed for them to confidently perform as IL educators. The school librarians' experience and professional qualifications will consolidate their readiness in the ILE implementation.

The organizational factors are IL Policies and standards, Teaching and Learning Strategies, Professional Development and Infrastructure. These can help to support, facilitate and strengthen the implementation of ILE in Malaysian secondary schools.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter explains the methodology used in the present investigation including the description of research design, approach and techniques, population, samples, development of survey instruments, implementations, including the efforts to establish its validity; description of pilot test, data collection procedures and method of analysis comprised in this study.

The study aimed to examine the information literacy (IL) implementation in Malaysian schools from the perspective of the school librarians as well as investigate the organizational factors that influence IL implementation in Malaysian schools (Section 1.5, pg. 11-12). The research objectives guiding this study are:

1. To explore school librarians' perception about information literacy implementation in Malaysian secondary schools.
2. To explore school librarians' readiness for information literacy implementation in Malaysian secondary schools.
3. To determine the organizational factors influencing the implementation of information literacy education in Malaysian secondary schools.

#### **3.1 Literature Review relating to methodology**

At the beginning of the research, substantial literature reviews were done. The literatures justify the need of research problem and suggesting potential purposes and

research questions for the study as suggested by Creswell (2008). Findings from the literature review have been discussed in Chapter 2. Generally it forms the knowledge base of the researcher in interpreting the interviews data findings from the interviews with school librarians.

The findings of the review revealed that knowledge of IL is necessary for school librarians to carry out their role of information specialist as teacher of IL skills and as instructional partner (Church, 2007). The existing factors outline the research which focuses on the implementation of IL in schools.

The researcher uses quantitative research method to investigate and examine whether school librarians are ready and capable to undertake information literacy implementation (ILE) in secondary schools. It aims to ascertain school librarians' perception about IL implementation in Malaysian secondary schools. It also explores school librarians' cognitive, functional and technical readiness in IL implementation in Malaysian secondary schools. It seeks to identify the organizational factors influencing the implementation of ILE in Malaysian secondary schools. Therefore, these data are collected and analyzed to describe, explain, predict or control the element of interest (Gay, et al., 2009). The researcher uses this approach to collect and generate data from target groups in the country.

Therefore, this study focused on understanding what school librarians perceive as important issues or factors in the successful implementation of IL. The data is collected using interviews and questionnaires to get substantial data on the phenomenon and to empirically test the outcome. The current research utilizes similar descriptive

methods to examine the IL knowledge of graduate teacher education students (Church, 2007) and research on IL roles of school librarians in Israeli high schools (Dotan & Aharony, 2008).

Table 3.1 underlines the major steps in this study, based on the purpose of the study. Research question 1 on the general perception of school librarians was deployed using the interview method. Data from the interview revealed the themes that were examined using the survey method, mainly by assessing school librarians' readiness and organizational factors influencing ILE implementation.

Table 3.1 Method based on research questions

Research Objectives	Operational	Items	Method
<b>RQ1. General perception</b>	Implementation of IL in schools		<b>Interview</b>
<b>RQ2. Readiness</b>			<b>Survey - Questionnaire</b>
• Cognitive Readiness	Knowledge about IL <ul style="list-style-type: none"> <li>• IL concept</li> <li>• Information literate attributes</li> </ul>	2 items 10 items	
• Functional Readiness	• Attitude –Perception about role as IL educator	7 items	
• Technical Readiness	• Self-assessed information literacy skills	14 items	
<b>RQ3. Readiness</b>	Experience and Professional Qualifications		<b>Survey - Questionnaire</b>
<b>RQ4. IL Implementation</b>			<b>Survey - Questionnaire</b>
	• Curriculum	10 items	
	• Policies	3 items	
	• Standards	2 items	
	• School Librarians' Requirements	5 items	
	• Infrastructure	2 items	



Numerous studies about IL, teachers and school librarians used semi-structure interview and survey questionnaires as the research methods to investigate the understanding of IL concept, IL skills, the relationship with learning, role of library media teachers, training and development for school librarians as in Table 3.2. Therefore, this supported the basis of using survey research method to investigate the notion of research.

Table 3.2 Studies on information literacy and teachers

Author	Context	Method	Main Findings
Merchant, & Hepworth, (2002)	Information literacy of teachers and pupils	Observations of pupils' behaviour Individual interviews Group interviews with pupils.	Teachers were found to be information literate but their skills were not transferred to pupils.
Williams and Wavell, 2006	Secondary school teachers' understanding of the term IL and its relationship with learning.	Focusing on curriculum-based information activities and the learning process from the teacher perspective.	Teachers tended to have different conceptions of information literacy.
Turner, Matthews, Ashcroft, & Farrow (2007)	-management of independent secondary school libraries.	A survey questionnaire	The attributes for school library managers are identified as communication skills, involvement in information literacy.
Williams and Wavell, 2007	Secondary school teachers' conceptions of student IL	A practitioner centred; In-depth qualitative data and a phenomenon graphic approach	Teachers' conceptions influenced by individual experiences and curriculum priorities.
Ritchie, (2011)	School librarians' self perceived status	Survey -emailed questionnaire	Support affects one's self perceived status of school librarians.
Nelson, (2011)	School librarian perceptions of professional identity	Semi structured interview	-School librarians often lack current job descriptions. -Understand school librarians' professional role and value.
Kamal & Normah, (2012a)	Role of library and media teachers	A survey questionnaire	The need for professionally trained and credentialed school librarians.

Table 3.2 Continued

Author	Context	Method	Main Findings
Kamal & Normah, (2012b)	Training and development for school librarians	A survey questionnaire	Training policy Management of school authority. Developing its human resource at school libraries.
Smith, (2013)	Information literacy skills needed by students. Factors influence teachers' ability to teach IL skills?	Interview -data analysis a phenomenological approach	Experience needed in IL instructions. -teachers interested in developing these skills and assisting IL skills development in students.

### 3.2 Design of the study

#### 3.2.1 Research paradigm

According to Johnson & Christensen (2012), a research paradigm is a viewpoint about research believed by a community of researchers that based on a set of shared assumptions, concepts, values and practices. It is an approach to thinking about doing research.

Katsirikou, & Skiadas (2010), describe that quantitative research held a distinctive epistemological nature. It has epistemological basis but not completely characterized as positivist. Positivism supports the application of methods of the natural sciences to the study of social reality. This research is a positivist approach research whereby it supports an epistemological foundation. These theoretical foundations presume certain category of research methods, which conducive to an objective, positivist approach such as surveys, questionnaires, structure interviews, experiments, quasi-experiments and official statistics and content analysis of documents.

### **3.2.3 Research methodology**

Research methodology is a system of models, procedures and techniques used to find the results of a research problem (Panneerselvam, 2004). According to Gay, et al., (2009), quantitative research approaches are applied to describe current condition, investigate relation, and cause-effect phenomena. Creswell (2008), describe quantitative research as the approach to address research problems requiring a description of trend or an explanation of the relationship among variables. It also describes a trend means that the research problem can be answered best by a study in which researcher seeks to establish the overall tendency of responses from individuals and note how this tendency varies.

Researcher used this model, procedure and technique to investigate the current condition and investigate school librarians' perception about IL, to explore school librarians' IL readiness and IL implementation in the country.

### **3.2.4 Descriptive research design**

A descriptive research design describes characteristics of a sample and relationships between phenomena, situations and events observed by researcher (Rubin & Barbie, 2008; Thomlison, 2001). This research used descriptive research design to investigate and describe about what is happening "on the ground" in school libraries.

Researcher seeks to do this by better understanding and measuring how variables are naturally distributed (Yegidis & Weinbach, 2002). The result is to provide data about the respondents that describe basic relationships to increase our understanding of the questions being asked (Rubin & Barbie, 2008).

This research did not delve into exploring new issues or explanations of reasons or cause-effect relationship. The aim was not to determine cause-effect relationship or identify the underlying causes (Gravetter & Forzano, 2006; Leedy & Ormrod, 2005; Neuman, 2006). It merely illustrates the characteristics of an existing phenomenon at the current state of affairs at the time of the study (Gravetter & Forzano, 2006; Salkind, 2006). It provides a broad picture of the existing issues of school librarians and their readiness in IL implementations.

The researcher targeted a population or a phenomenon and aims to answer the questions “who, what, when, where, and how?” The researcher determined how the variables are distributed or how sample can be characterized. The findings are described using charts or graphs that depict percentages, means or frequencies. The research also involved conducting analysis to assess whether there are any patterns of relationships among variables as suggested by Yegidis & Weinbach, (2002).

### **3.2.5 Survey research method**

This research employed survey research method as the procedures in quantitative research in which in researcher administer a survey using interviews and questionnaire to school librarians to describe their attitudes, opinions, and characteristics of the population about the school librarians’ perception about IL, to explore school librarians’ IL readiness and IL implementation in the country.

This method involved in collecting data through interviews to confirm the issues arise from the literature. The findings from the interviews were used to develop questionnaire. The questionnaire were involved in measurement, quantification and

instrument building and also making sure the instrument is appropriate, valid and reliable (Gay, et al., 2009; Oppenheim, 2004). The questionnaire were statistically analyzed to describe trends or school librarians' opinions on some issues to answer questions and test research questions about the current status of IL in schools as recommended by Creswell (2008). It interprets the meaning of the data by relating results of the statistical test to the past studies (Creswell, 2008).

This research provides a 'snapshot' of current state and development of IL implementation in schools. The researcher utilized a used cross-sectional design to collect these data at a single point of time and a standalone research (Bryman, 2004; Creswell, 2008; Gay, et al., 2009).

Other researchers (Probert, 2006, 2008; Reed, 2009) also utilized questionnaires and interviews to obtain data from samples in the investigation of teaching of IL skills by teachers in New Zealand secondary schools and the teachers' as well as students' readiness towards the application of IL and learning in the development of lifelong learners.

Therefore, this research started by identifying the research problems, and then followed by a review of literatures. The researcher reviewed a substantial amount of literature to embark on the research to justify the necessity to propose potential objectives and research questions for this study (Creswell, 2008). Evidence from the

literature review was later verified through interviews to examine the actual issues that need investigating.

As a result of this, themes emerged and were grouped together as the starting point in gathering more information. Interviews were carried out to gather more data to develop a survey instrument. The outcome of an interview records the tendency of varied responses among people and informs how a large population views an issue and in addition, the diversity of views (Creswell, 2008). The researcher uses this method to seek the views and opinions from the school librarians that signify the view of their communities as well as develop the findings into analytical and significant research.

The researcher developed a survey instrument from literature themes and interview data. Once the instrument is ready, it was pretested and followed by a pilot test to rectify any issues emerging from the instrument. Once the instrument was finalized, the final survey was carried out. The results were analyzed and reported as shown in Figure 3.1.

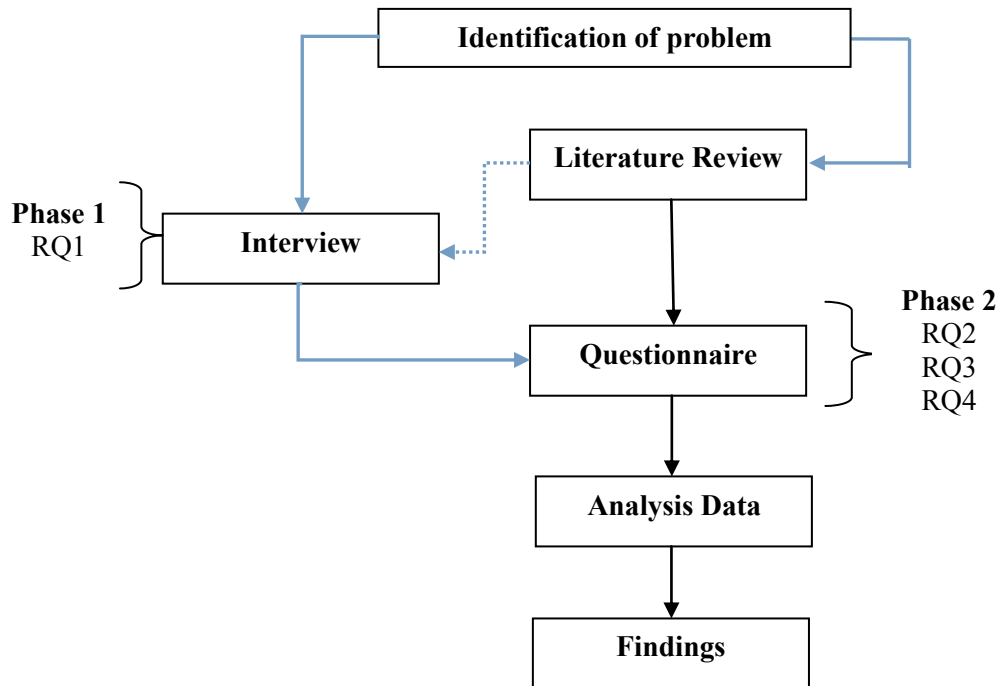


Figure 3.1 Flowchart of the research design

### 3.3 Phase I

#### 3.3.1 Interview

The themes from the literature findings were analyzed and formed the semi-structured questions in the interview. According to Boudah (2010), an interview is an opportunity to get information about their beliefs, perspectives and views of IL in schools.

Creswell (2008) describes that an interview survey aims to get views of school librarians in order to find out what is on their mind, thoughts, belief, feeling and experience. He further explains that an interview survey is a structure by which a researcher records answers from the interviewees in the research.

Through this process, Fraenkel and Wallen (2007), suggests that the researcher obtain responses through questioning, listening, and recording feedback. They further suggest six basic types of questions to ask the interviewees. They recommend demographic, knowledge, experience, opinion, feeling and sensory questions but it is not necessary to ask every question explicitly as some answers may emerge while a participant is responding. The researcher is encouraged to ask respondents to talk about the topic without divulging particular answers.

### **3.3.2 Semi structure Interview**

According to Lodico, et al, (2010) semi-structure interview is typically planned carefully before the interview is carried out. The researcher develops interview protocol that includes a list of questions or topics to address in the interviews with all the participants. Interview protocol helps to guide the collection of data in a systematic and focused manner. Lodico, et al, (2010) describes that the interview is only semi-structured if the researcher can change the order of the questions, omit questions or vary the wording of the questions depending on what happens in the interview. He adds that researcher might also add other questions during the interview to probe unexpected issues that emerge.

### **3.3.3 Design of the interview and Pre testing**

The researcher drafted and developed an interview protocol that includes a list of questions to be address in the interviews with all the participants. The interview protocol helps to guide the collection of data in a systematic and focused manner as suggested by Lodico, et al, (2010). The pre-test of the interview protocol were conducted. It was distributed to three school librarians, colleagues and supervisors to



comments. During this pre-test interview, the researcher explained what the interview is about and its purpose. The researcher asked the list of questions to the participants to check the questions in detail and the appropriateness of the language, any double meaning or multiple issues in one questions or the questions help to motivate the participants to discuss their opinions as suggested by Adams, et al, (2007).

The interview instrument or protocol was tested for the reliability and validity. The interview questions were tested where the same interview or questions were repeated with the same person over a period of time and it produced the same results. This method is suggested by Pettersen & Durivage (2008), Banyard & Flanagan, (2013) and Newby, (2013).

The validity of interview concerns whether it really measures what the researcher intended to measure. Validity also concerns whether a respondent tells you their true thoughts (Banyard & Flanagan, 2013). The objective of the interview process is to understand how respondents understand and make meaning of their experiences. The interview structure was designed to be meaningful to the respondents as well as to the researcher, and then it is valid (Seidman, 2012).

Therefore the validity and reliability of the instruments depends on the information collected and it represent the actual situation that researcher intended to examine. The approach and the techniques used are appropriate and confirm the technique is significant. The results of the interviews were triangulated and validated.

The interview was repeated three times as an attest of reliability. The information was obtained in the same process from three different interviewees. The results or evidence from the interviews confirm with the documentary evidence and vice versa. Therefore, this interview instrument demonstrated reliability and validity as suggested by Newby, (2013).

#### **3.3.4 Pilot test Interview**

The researcher conducted pilot testing and field-tested with four school librarians to get feedback and ensure the questions will elicit the required responses. They are the individuals that best to identify the content and structure of questions. The pilot test were conducted exactly the same conditions as will be used for the interview.

It is to test whether the right questions being asked, obtain the needed information. This is to make sure the contents or wording of each questions relevant to the intended interviewees. It is to test if the interviewees have the knowledge to answer the questions as suggested by Tylor, et al, (2006).

During the pilot testing, the wording was modified or probing questions were added where respondents struggled to answer the questions. As the result of the pilot testing, the order of the questions was rearranged and some of the questions were grouped together to help natural flow as recommended by Lapan, et al, (2011). The final copy of the interview Moderator guide in Appendix A on page 266. Table 3.3 shows the semi-structured questions used for the interview.

Table 3.3 Interview semi-structured questions for school librarians

Interview semi-structured questions	
1.	Can you tell me about yourself? Your experiences? Qualifications, etc?
2.	How long have you been in charge of the school library?
3.	What are your main responsibilities as the school librarian?
4.	What do you know about information literacy?
5.	Would you consider yourself as an information literate person? Why?
6.	What do you know about information literacy implementation in schools? Probe: Government policy? Standard? Integrated curriculum?
7.	Have you had any formal training in information literacy education?
8.	How do you think IL can be taught in schools?
9.	What support do you need to have to teach information literacy in schools?
10.	What are the setbacks in implementing information literacy in schools?

### 3.3.5 Interview participants

#### Purposive sampling

For the interview purpose, the researcher selects eight samples. They were six school librarians from the semi-urban and rural schools in Hulu Langat district and two former school librarians who are currently education technology officers in ETD and TED in the Ministry of Education.

The researcher utilized purposive sampling method to select each sampling. Each sampling was selected for a purpose because of their unique position as school librarians. They were selected because they are the ‘key informant survey’. They are particularly knowledgeable about the existent issues under investigation as suggested by Grinnell & Unrau, (2010).

The researcher used the three guidelines as suggested by Rubin & Rubin (1995), for selecting informants for purposive sampling strategy. The informants should be knowledge about the situation and experience being studied, willing to talk, and representative of range of points of view.

### **3.3.6 Data Collection**

#### **Interview Procedures**

Permission to involve these teachers was obtained from EPRD. After receiving the approval letters for data collections as in Appendix B on page 267, a list of school librarians was prepared and invitation letters sent to them to participate in the study. All eight, comprised of six school librarians and two education officers agreed to participate. It was assumed that all the selected teachers would contribute sufficient and substantial information. The interviewees contributed their time and effort to participate in the research process in order to convey their points of view, knowledge, and experiences in practising and engaging their role in the IL implementation as well as the education officers' role as education policy planners and architects.

The researcher used one-on-one interview procedure whereby researcher conduct an interview with an individual and record their responses as suggested by Creswell (2008). Initially, the researcher began to identify some questions, in advance, from the comprehensive literature review. As a novice researcher, the interview questions are prepared in advance to assure all issues are discussed during the course of the interview. The researcher used inquiry process and began with initial open-ended questions.

The interviewees were comfortable to be interview at their work place such as school libraries and education offices. It was comfortable, private and quiet. At the beginning of the interviews, the researcher built up the rapport and trust. The researcher introduced the general topic and discussed the purpose and the study outline. The researcher reminded interviewees of their anonymity and confidentiality of their

responses. Interviewees understood the anonymity and confidentiality issues and agreed to participate in the study.

The interviews began with general information about interviewees and the issue being studied. The questions were presented starting with the most general questions and continued with probing questions. They are based on research questions and the overall research problems. These open-ended questions are used as interview guide. They are followed up with probes seeking further detail and description about discussions. The researcher audio taped all discussions and kept detailed written notes of the conversation (Lodico, et al, 2010; Roulston, 2010).

### **Saturation point**

The researcher stopped at eight samplings during the interviews for the reason that it reached the saturation point. At this point, the samplings provide the meaning of concepts and themes needed. There were no new issues or emerging findings from the subsequent interviews (Rubin & Rubin, 1995; Grinnell, & Unrau, 2010; Mason, 2010; Applegate, 2013 & Emmel, 2013).

### **3.3.7 Interview data analysis**

After the interviews were done, the researcher read the field notes and transcript the interview. The researcher searched for recurring themes, common threads and identified the potential themes. As in Table 3.4, the researcher built the themes into background that describe the school librarians' perceptions about IL and the factors involve in the ILE implementations. At this point, these themes were used to confirm the findings of the literature. Then, the data were classified them into categories and coding pieces of

data. Each excerpt is coded with a notation. This phase was carried out as suggested by Fraenkel et al. (2011) and Gay, et al.(2009).

Table 3.4 Interview notation

Code/theme	Category/ points	Excerpts	Notations
<b>Background</b>	<b>School Librarians' Perceptions</b>		<b>*participant/theme/category/line</b>
	Concept IL	c	S1/b/c/97-103
	Role	rl	S1/b/rl/74
	Skills IL	ILs	S7/b/ILS/72
	Problems	pro	S5/b/pro/151
	Attributes	A	S5/b/A/40
	Experience	ex	S8/b/ex/110
<b>Factors</b>	Implementation	Imp	S3/fa/Imp/64
	Teaching IL	Te	S1/fa/TeIL/11
	Management	mane	S7/fa/mane/88
	Policies	Po	S7/fa/Po/60
	Standards & Guidelines	Std	S1/fa/Sta/161
	Qualifications	qua	S1/fa/qua/71
	Curriculums/ syllabus	cur	S6/i/cur/82
	Training IL	TIL	S1/fa/TIL/142
	Training LIS	TLIS	S7/fa/TLIS/6
	Infrastructure	Inf	S1/fa/Inf/265
	Career advancement	Ca	S6/fa/ca/104

### 3.4 Phase II

#### 3.4.1 Survey-Questionnaire

As mentioned in Section 3.2, page 83, this research is a descriptive research design that used questionnaire as research tool for data collection. According to Panneerselvam (2004), a questionnaire consists of a set of well-formulated questions to probe and obtain responses from respondents. Questionnaire was prepared in such a way so that respondents could complete them without any assistance (Blaikie, 2009).

### **3.4.2 Quota Sampling**

This research used a non-random probability method that is quota sampling. This method produced a sample with similar distribution of characteristic to be important in the population that is supposed to represent. A set of selection criteria is identified because of their relevance to the research topic as describe by Blaikie, 2010. This was to ensure that a proportion of school librarians were represented in the 13 states in Malaysia including the three Federal Territories (Kementerian Pelajaran Malaysia, 2009). There are equal percentages in each stage to incidence in the population.

The quota samplings are generated from the total of 2,189 secondary schools from 31st January data (Kementerian Pelajaran Malaysia, 2009). With the population of (2,189) school librarians in secondary schools, 326 school librarians were required. They were chosen based on the same criterion that they are school librarians in secondary schools in each state. The proportions of the number of sampling unit selected from these categories are the same as in the population that was 14.99% using the formula as suggested by Panneerselvam (2004), Blaikie (2009), Kumar (2011) and Bryman, (2012) as in Appendix C on page 286.

The proportional representations from each state are listed in Table 3.5. Therefore, with the estimation of a 50% response rate, the numbers of questionnaires sent out to each state are doubled to get the return of 654 questionnaires based on the Krejcie and Morgan's (1970) sample size table determination for research activity in Table 3.5.

Table 3.5 School librarians in each state- 31<sup>st</sup> January 2009

(Kementerian Pelajaran Malaysia, 2009)

No.	States	Schools	Samples	Estimated with 50% returned
1	Perak	236	35.25	71
2	Selangor	256	38.22	76
3	Pahang	180	26.87	54
4	Kelantan	135	20.14	40
5	Johor	240	35.83	72
6	Kedah	173	25.83	52
7	WP Labuan	9	1.34	3
8	Melaka	73	10.88	22
9	Negeri Sembilan	116	17.29	35
10	Pulau Pinang	123	18.34	37
11	Perlis	26	3.85	8
12	Terengganu	135	20.14	40
13	WP KL	94	14.02	28
14	Sabah	207	30.9	62
15	Sarawak	177	26.42	53
16	WP PTJY	9	1.34	3
Total		2189	326.66	656

### 3.4.3 Survey Instrument

This research utilized self-administered questionnaires filled by respondents in the absence of the researcher. The respondents read and answered the questionnaires with simple instructions. The absence of the researcher eliminates the bias effect, (Neuman, 2006) but the items could have been misinterpreted or seem unclear to respondents making the results biased (Jackson, 2009). Therefore, this creates a non-response bias as a researcher-respondent interaction does not help the respondents to understand the questions (Mitchell & Jolley, 2010). The researcher also has little personal interaction with participants as the study collects data by using paper and pencil, which are non-interactive instruments (Gay, et al., 2009).



In order to carry out the survey, the researcher collaborated with the education technology officers from of TAC and ETD in each state. These officers assisted in distributing and administering the survey in-group (group-administered questionnaires) to facilitate the data collection during meetings, courses or other collective activities. They were in charge and acted as invigilators who helped and facilitated the administration of the questionnaires. The officers collected the completed questionnaires and mailed them to the researcher. Although Dillman (2007) indicates that although this type of administration is often enormous and cost saving, it is quite costly to deliver a large number of questionnaires to all 13 states in Malaysia including the three Federal Territories.

This research used a closed-ended structured questionnaire as the survey instrument to collect data. The questionnaire was a self-designed questionnaire based on the literature review and analysis of major themes from the interview data. It was prepared in dual languages, English and Bahasa Malaysia (National language; Malay language) to help in the school librarians' understanding. The statements were designed in neutral statements as suggested by Neuman (2006), Creswell (2008) and Gay, et al., (2009). Since level of agreement is used to measure readiness, the statements need to be positively stated.

The questionnaire starts with a brief introduction, instructions and a pledge to keep this research a guarantee both in anonymity and confidentiality of responses, which means only the researcher, would have access to information. It was explained that the data would be used for academic research only and reported in aggregates and summaries as suggested by Beins (2009) and Bordens & Abbott (2008).

The items in sections two, three, and four employed a five scale Likert type responses. Likert scale is named after psychologist Rensis Likert, who developed the five point's response scale with equal intervals between each point on the scale. According to Simon & Goes (2013), Likert-type scales are used to quantify results and obtain shades of perceptions. Choices (or categories of responses) usually range from strongly disagree to strongly agree. He further describe that Likert-type scales very commonly used with interval procedures, provided the scale has at least 5 and preferably 7 categories. He noted that Likert, himself stating that "If five alternatives are used, it is necessary to assign values from one to five with the three assigned to the undecided position." Lodico, et al, (2010) suggests that a researcher may decide to use 6- or 5-point scale, depending on the purpose of the study. The range for a five-point scale would be strongly disagree, disagree, neutral, agree, and strongly agree. The scale uses to register the extent of agreement or disagreement with a particular statement of opinions (Beins, 2009; Creswell, 2008; Gravetter & Forzano, 2006; Tuckman, 1994). A Likert rating scale presents a statement rather than a question (Jackson, 2009).

The fifty-five items in this instrument are statements in which respondents indicate their degree of views and opinions of IL. They tick or mark the number that best reflects their view of agreeing or disagreeing with each statement (Bordens & Abbott, 2008) as in Appendix D on page 287.

1. Section A - The first section contains five items. There are demographic questions designed to assess the characteristics of participants such as location of their schools, states, the infrastructure facilities in their schools, teaching experiences, school

librarians' experiences, SRC courses as well as the LIS qualifications as shown in Table 3.6. These demographic questions are used as predictor variables for data analysis to determine whether participant characteristics correlate with or predict responses to other items in the survey (Bordens & Abbott, 2008).

Table 3.6 Content of the demographic research metric

Questions	Source of Information	Measurement Scale	Attributes
Section I:	1. Demographic		
	2. Location; a. State b. District	Nominal String—for quota sampling purposes	Code: 1-16
	3. Facilities	Nominal	0=No , 1= Yes
	4. Years of Experience	Scale	Number of years
	5. Length of school librarians' experience	Nominal	a. 0 - 5 years b. 6 - 10 years c. Above 11 years

2. Section B - The second section comprises nineteen structured questions focusing on school librarians' readiness, which comprises Cognitive Readiness, Functional Readiness, and Technical Readiness to answer research question 2 and 3 as shown in Table 3.7.

Cognitive Readiness focuses on their perception about IL concept (Q7-8) and their perception about the information literate attributes (Q9-18) in order to analyze their various views, opinions and perceptions about IL.

Functional Readiness focuses on how school librarians perceive their roles as IL educators (19-25). The respondents indicate the extent of their agreement with the statements using Likert scale ranging from 1 for "Strongly disagree" to 5 for "Strongly agree".

Technical Readiness comprises fourteen items on the IL competencies (Q26-39). The questions aim to determine the level of self-assessed IL skills among school librarians. They ascertain their self-estimated level of self-assessed IL skills by indicating on the five Likert scale ranging from 1 for ‘Do not know at all’ to 5 for ‘Excellent’. These items are adapted and adopted from the IL Big Six Model list of skills. The category for “don’t know” is included for respondents who in case might be irritated or who were uncertain or without opinion rather than forcing them to answer (Mangione, 1995; Neuman, 2009).

Table 3.7 Content of the questionnaire research metric section B

Research Objectives	Research Questions	Method	Measurement Scale	Data Analysis
2. School Librarians' Readiness	RQ 2: What is the level of school librarians' readiness in IL implementation in Malaysian secondary schools?			
		Survey Questionnaire	- Is measured by 3 sub-scales – as in i, ii, iii.	
	i. What is the level of school librarians' cognitive readiness?	i. IL Concept - 2 items - Q7-8	Interval (Scale in SPSS)  <u>A five Likert scale</u> a. Strongly disagree = 1 b. Somewhat disagree = 2 c. Neutral = 3 d. Somewhat agree = 4 e. Strongly agree = 5.	Mean , SD
		ii. Attributes -10 items - Q9-18		
	ii. What is the school librarians' functional readiness?	iii. Roles - 7 items - Q19-25		
	iii. What is the level of school librarians' technical readiness?	iv. Organizational factors -14 items - Q 26-39	Interval (Scale in SPSS) <u>A five-Likert scale</u> a. Do not know at all = 1 b. poor = 2 c. average = 3 d. good= 4 e. excellent= 5.	

Table 3.7 Continued

Research Objectives	Research Questions	Method	Measurement Scale	Data Analysis
2. School Librarians' Readiness	RQ 3: Do experience and qualifications influence school librarians' readiness?			
	Experience	<u>Nominal scale</u> a. 0 - 5 years b. 6 - 10 years c. Above 11 years		
	Professional qualifications	<u>Nominal scale</u> a. None b. In-service SRCM courses less than one semester c. In-service SRCM courses one semester or more d. Tertiary level in LIS		
	i. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience?	<b>Survey</b> Questionnaire	Interval (Scale in SPSS)	Anova
	ii. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the four levels of school librarians' professional qualifications?		Interval (Scale in SPSS)	Anova
	iii. Is there a statistically significant mean difference in teacher librarians' functional readiness across the three levels of school librarians' experience?		Interval (Scale in SPSS)	Anova

Table 3.7 Continued

Research Objectives	Research Questions	Method	Measurement Scale	Data Analysis
2. School Librarians' Readiness	RQ 3: How do experience and qualifications influence school librarians' readiness?			
	iv. Is there a statistical significant mean difference in the school librarians' functional readiness across the four levels of school librarians' professional qualifications?	Survey Questionnaire -	Interval (Scale in SPSS)	Anova
	v. Is there a statistically significant mean difference in teacher librarian's technical readiness across the three levels of school librarians' experience?		Interval (Scale in SPSS)	Anova
	vi. Is there a statistical significant mean difference in the school librarians' technical readiness across the four levels of school librarians' professional qualifications?		Interval (Scale in SPSS)	Anova

3. Section C - This section comprises twenty-two questions (Q40-61) based on the organizational factors influencing ILE implementation in Malaysian secondary schools including the Curriculum, Policies, Standards, School Librarians' Requirements and Infrastructure to answer research question 4 as showed in Table 3.8. The respondents indicate the degrees of importance of the aspects needed for the ILE implementation. All these answers are in five Likert scales ranging from 1 for 'Not important at all' to 5 for 'Extremely important'.

Table 3.8 Content of the questionnaire research metric Section C

Research Objectives	Research Questions	Method	Measurement Scale	Data Analysis
4. Organization Factors	RQ4: What are the organizational factors influencing the implementation of information literacy in secondary school in Malaysia?			
		Survey - Questionnaire  22 items -Q40-61	Interval (Scale in SPSS)	Frequency and Percentages

The entire items seven to sixty-one are close-ended questions. These questions are restricted items with limited number of specific responses, arranged in logical order. These items control the participants' range of responses because they are easier to code, summarize, and analyze compared to responses made by open-ended items (Bordens & Abbott, 2008; McBurney & White, 2007).

Finally, a single open-ended question in the section seeks to solicit opinions or further comments regarding the issue of IL implementation. The respondents voice out their views, opinions and suggestions on other aspects needed for the school librarians' readiness and the organizational factors influencing ILE implementation in secondary schools. Respondents comment or raise enquiries related to the study in their own words (Bordens & Abbott, 2008; McBurney & White, 2007).

#### 3.4.4 Pre-test

Once the questionnaire was constructed, the researcher distributed the instrument to a group of colleagues to seek opinions of the questionnaire design. They reviewed the questionnaire designs, wording of the questions and instructions in an

informal setting. Their reviews are effective in identifying questionnaire errors including typographical errors, complex layout and instructions, the flow and coherency of questions as suggested by Biemer and Lyberg (2003).

Subsequently, the researcher distributed the instrument to ten school librarians through TAC in Kajang. They answered and made comments about the questions. This was to make sure the group understood the meaning of the questions and provided sufficient variation of answers (Bethlehem, 2009). Furthermore, pre-test respondents have ideal as they resembled the survey's target population (Converse & Presser, 1986). Their feedback and comments were taken into consideration. The researcher amended a few question structures, question approaches and changed the answers provided.

After the amendments, the researcher repeated a second pre-test on a group of fifteen school librarians from Teachers Activities Centre in Cheras. This procedure was to make sure that the researcher and respondents interpreted the questions exactly in the same way. Forsyth et al. (2004), states that pre-testing questions helps to identify problematic items and they believe that the revision represents an effective move toward improvement. The question modifications improved question understanding. Presser et al. (2004), agrees that problem detection and repair are essential for objectives of pretesting.

There are different viewpoints about the number of respondents a pre-test should have. Gay et al., (2009) considers that three to four individuals, who are thoughtful, critical and similar to the intended participants, would be sufficient to help identify problems. Converse & Presser (1986) and Saris & Gallhofer (2007) suggest that each



pre-test should have 25-75 respondents and that a minimum of two stages of pre-test should be undertaken.

Finally, the researcher conducted the pre-test in the framework of developmental (pre-test I), evaluation and polishing the pre-test II, followed by some useful amendments of each phase as recommend by Converse and Presser (1986) and Saris and Gallhofer (2007). The researcher applied the tests on the intended population with the view that the results could be generalised beyond the subject studied and ensure attaining external validity (Vogt, 2007).

#### **3.4.5 Pilot Test**

As soon as the instrument was tested and pre-tested, the researcher carried out the pilot test. The participants of the pilot test were the school librarians in secondary schools as they are the intended samples in the definite research. By using the convenient samplings technique, precisely thirty-six school librarians did the pilot test. They were from the states of Selangor, Negeri Sembilan and Federal Territories of Kuala Lumpur. From the total, 52.8% were from the urban area while remaining 47.2% were from the rural areas.

The instrument was distributed through the TAC and by emails. According to Muijs (2004) and Redline et al (2005), piloting the instrument with the targeted samples is to solicit school librarians' opinions on the instruments as well as the research as a whole. Therefore, piloting the instrument may minimise unforeseen problems.

As recommended by Creswell (2008) and Bordens & Abbott (2008), the researcher made changes and revised the instrument based on the comments and feedback before sending out to the sample in the actual study to ensure the research instrument functioned well as a whole.

Neuman (2006) states that it is essential to pilot every question, question sequence, every inventory and every scale in the research as well as the layout on the page, instructions given, answer categories and the question numbering system. Gay, et al. (2009) suggests that any omissions or unclear or irrelevant items shall be revised. These will provide information about instrument deficiencies as well as suggestions for improvement and a measure of content validity.

### **3.5 Reliability**

In the course of establishing the suitability and appropriateness of the instrument, the questionnaire was examined for reliability and validity. This was to ensure the instrument is appropriate, accurate, correct, credible, meaningful and useful to the research as a whole. Thus, it draws meaningful and defensible conclusions from the specific inferences made by researcher based on the data collected as suggested by Fraenkel & Wallen (2007) and Leedy & Ormrod (2005).

#### **3.5.1 Reliability of the Pilot Test**

In the process of developing a consistent and dependable research instrument, the instrument was tested so that the measurements between the respondents were not too varied across time periods and that a measurement taken at any point in time was reliable (Cohen, Manion, & Morrison, 2007; Hair, Black, Babin, & Anderson, 2010;

Neuman, 2006). The pilot test data were analyzed using the IBM SPSS Statistics 18. Thirty-six respondents answered all 56 questions on the school librarians' perception about IL, their self-assessed IL skills and the factors affecting the ILE implementation in schools. The overall Cronbach alpha reliability on the items was 0.961 indicating that the measurement reflected high reliability (Field, 2005; Gay, et al., 2009; Radhakrishna, 2007; Vogt, 2007). The items mean are 4.01 reflecting that a high number of respondents agree to the statements as in Table 3.9.

Table 3.9 Cronbach Alpha of each section of the questionnaire

Research Objectives	Operational	Items	Cronbach Alpha
<b>RQ 2. Readiness</b>			Pilot Test
• Cognitive Readiness	Knowledge about IL <ul style="list-style-type: none"> <li>• IL concept</li> <li>• Information literate attributes</li> </ul>	12 items	$\alpha = .934$
• Functional Readiness	Attitude –Perception about role as IL educator	7 items	$\alpha = .861$
• Technical Readiness	Self-assessed information literacy skills	14 items	$\alpha = .955$

### 3.6 Validity

In the process of producing a sound and quality research, the designed instrument has gone through a handful of processes to ensure that conclusions and implications based on the data collected were valid and reliable as suggested by Fraenkel & Wallen (2007). Fraenkel & Wallen (2007) explained that validity refers to which evidence is supported by any inferences made by the researcher based on the collected data using the instrument. These inferences should be appropriate, meaningful, correct, and useful as it validates the research and not the instrument itself. Therefore, the researcher concentrated on how to interpret the information as validity depended on

the amount and type of the evidence to support the interpretations based on the data collected. Thus, Vogt (2007) pointed out that a valid research design illustrates what the researcher knows about the research subjects.

For further validation, the content validity is taken into consideration to ensure that the contents of the questionnaire matched intended contents. Several scholars highlight that the experts' judgement helps to scrutinise the instrument to ascertain its validity for measuring the characteristics in question (Bryman, 2004; Fraenkel & Wallen, 2007; Leedy & Ormrod, 2005; Neuman, 2006; Neuman, 2009; Salkind, 2006). According to Gay et al., (2009), there is no formula or statistic that can be computed or any other way to express it quantitatively. Thus, expert judgement is the only practicable way to assess content validity with numerous revisions and improvements (Vogt, 2007).

Subsequently, the researcher submitted the instrument to the supervisor for evaluation. He verified the format and logical structure of the instrument including clarity of printing, size of type, appropriateness of language and clarity of direction. The researcher noted the comments and corrected the instrument.

Next, the researcher emailed the instrument to a group of school library and IL experts through emails for reviews and validations. They assessed, reviewed, and determined its sufficient contents and validity. The researcher noted their feedbacks and comments along amendments and improves the instrument as suggested. Once the experts validated the instrument, the researcher did a final amendment and mails out the questionnaires to the respective target groups through the TACs and ETSDs.

Reis & Judd (2014) explained that construct validity reflects the degrees to which a test measures an intended hypothetical construct. All variables derive from constructs and constructs are non observable traits such as intelligence, anxiety and honesty to explain behaviour. Construct underlie the variables that researchers measure.

Lastly, validity guarantees reliability as valid measures must be reliable. However, reliability does not guarantee validity. Reliable measure may not be valid, but reliability is still a precondition for validity (Graziano & Raulin; Mitchell & Jolley, 2010; Schutt, 2009).

### **3.7 Administration of the Survey Instrument**

Once the instrument was ready, the researcher applied for approval from the EPRD, MoE to carry out the research in schools. This took a month. With the approval letter, the researcher again wrote and applied for consent letter to carry out the survey in schools at all sixteen State Education Departments. In the meantime, the researcher prepared the cover letters and the acknowledgment letter from the university.

Each of the instrument packages contained of cover letters to the respective ETSDs' director, respective approval letters from the EPRD, State Education Department, the University of Malaya approval letters, as well as the instrument. The packages also attached self-addressed mailing envelopes with pre-paid postage for return of all answered instruments upon completion of data collection.

Subsequently, the researcher contacted the ETD to acknowledge them regarding the research to be carried out in the country. With their endorsement, they provided a list of officers to contact in all the sixteen ETSDs. These officers assisted and facilitated the survey. The researcher undertook pre-notice telephone calls to request their agreement and to make arrangements to facilitate the survey. Upon their agreements, the researcher mailed the instruments to all ETSD. The researcher further confirmed that they had received the mailed instruments. If they have not, the researcher mailed the replacements.

Accordingly, the officers-in-charge administered the instruments as group administered surveys to the assembled school librarians at their respective departments (Bordens & Abbott, 2008; Schutt, 2009). At this stage, they are convenient sampling. They were either attending ongoing courses or meetings at their organizations at that point of time. As soon as the school librarians completed the instruments, the officers collected and returned them to the researcher. Once done, the researcher sent out appreciations letters to the officer in charge. The whole process consisted of more than five contact stages as suggested by Dillman, 2007.

Due to the considerable large area and respondents' coverage for the research, the researcher codes instruments to identify the respondents' schools and states to facilitate data entry as the instruments arrive for appropriate data analysis.

### 3.8 Data Preparation and Analysis Assumptions

This phase is a questionnaire survey built upon comprehensively reviewing literatures and a result of the interview phase. The analysis of these data is presented in following orders and as Figure 3.2.

- a. Descriptions of sample data are in descriptive analysis. The findings are in mean, standard deviation, frequencies and percentages.
- b. Descriptions of the findings are in descriptive and inferential analysis to answer the research questions in relation to the research objectives. The one opened questions are transcribed and coded. The inferential analysis includes One-way Anova.

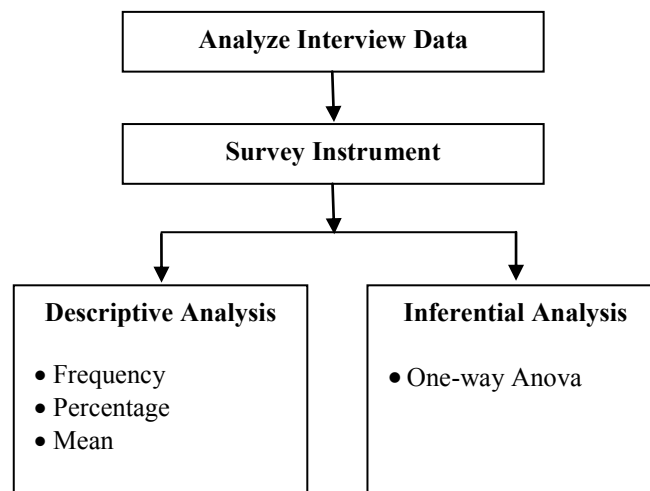


Figure 3.2 Data Analysis

#### 3.8.1 Code Process and data cleansing

Once all the data set was ready, the data cleansing process was carried out to ensure the appropriateness of the numerical codes for values of each variable. The score

of each variable recoded in the data file represents the behaviour of an individual sampled by this research. The code cleaning determined in every case as to whether each variable contained only legitimate numeral codes or values and secondly, whether these legitimate numeral codes seem reasonable. The code cleansing addressed on the variable's code is within the specified range (Meyers, Gamst, & Guarino, 2006).

### **3.8.2 Handling Missing Data**

Missing data are information that is unavailable for a subject (or case). This occurs when a respondent fails to respond or answer one or more questions in a survey (Field, 2005). According to Hair et al., (2010), missing data of less than 10% for any individual can generally be ignored except when the missing data occurs in a specific non-random fashion. The number of cases with no missing data must be sufficient for the selected analysis technique if replacement values are not imputed for the missing data.

On the other hand, Tabachnick and Fidell (2007) described missing points as scattered and randomly found throughout the data set and less than 5% of the data points. There are procedures for handling missing data similar results (Tabachnick & Fidell, 2007).

The mean imputations are implemented, and they provide all cases with complete information. It is best used with relatively low levels of missing data (Hair, et al., 2010). According to Meyers et al., (2006), if the sample is large and the number of missing values is small, this is not a serious consideration. In view of this, these conditions were fulfilled by this research and the mean imputations were used.



### **3.8.3 Outliers**

According to Hair et al., (2010), outliers are observations with a unique combination of characteristics identifiable as distinctly different from the other observations. Outliers are cases with extreme or unusual values on a single variable (univariate) or a combination of variables (multivariate) (Hair, et al., 2010; Meyers, Gamst, & Guarino, 2006).

On the other hand, during this research, respondents were asked to express their views in Likert-type (value ranges from 1 to 5) to a series of questions. In the analysis of these responses, the researcher does not regard them as outliers (those expressing the lowest values of 1 or the highest value of 5) for they are the result of extraordinary opinions, which may account for the uniqueness of the data (Hair, et al., 2010).

The researcher regards these highest or lowest values as fitting the objectives of research and so has retained them in the analysis. Possibly, they may represent an emerging element or an untapped element which previously was not identified (Hair, et al., 2010; Osborne & Overbay, 2004).

## **3.9 Multivariate Statistical Assumptions**

Most of the univariate and multivariate statistical tests require statistical assumptions. Significant to multivariate analysis are the assumptions of normality, and linearity. Should one or more of these assumptions be violated, the statistical results may become biased or distorted (Hair, Black, Babin, & Anderson, 2010; Meyers, Gamst, & Guarino, 2006; Tabachnick & Fidell, 2007)

### **3.9.1 Normality and Linearity**

Both the univariate and the multivariate statistical methods in this text are based on the assumptions of univariate normality as in the multivariate methods which are also based on assuming multivariate normality (Hair, et al., 2010).

The normality of univariate data can be assessed based on the standardised skewness and kurtosis of the variables between +1.96 and -1.96 at the .05 error level (Field, 2005; Hair, et al., 2010; Tabachnick & Fidell, 2007). In social science by statistical convention, skewness and kurtosis both should fall in the range from +2.0 and -2.0 if the data are normally distributed (Chua, 2008; Lewis-Beck, Bryman, & Liao, 2004).

An implicit assumption of all multivariate techniques based on correlation measures of associations is linearity. Assuming that the variables in the analysis are related to each other in a linear manner, it can be best assumed that the best fitting function represents the scatterplot in a straight line.

The use of bivariate scatterplots is the most typical way of assessing linearity between two variables. Variables that are both normally distributed and linearity related to each other will produce scatterplots that are oval shape or elliptical. If one of the variables is not normally distributed, linearity will not be achieved. The situation is resulting scatterplots, which will be no elliptical (Tabachnick & Fidell, 2007, Meyers, et al., 2006).

### **3.9.2 Assumptions of One-way Anova**

The analysis of variance (ANOVA) is used to analyze situations in which there are several independent variables. They show how these independent variables interact with each other and what effects these interaction have on the dependent variable (Hinton & Brownlow, 2004; Field, 2005).

This test meets the assumptions that data are parametric and normally distributed. The variances in each experimental condition are fairly similar, observation should be independent and dependent variables should be measured at least an interval scale (Field, 2005).

### **3.9.3 Open-ended Question**

The questionnaire contains an open-ended question. This is open-question is a fill-in-the blank or short-answer question. According to Bailey (2008), Mitchell & Jolley (2010) and Rosenblatt (2013), open-ended question is to draw out respondents' opinions, suggestions and to elicit the participants' IL opinion and beliefs in schools. Salant and Dillman (1994) also believe that open ended questions are inspiring in the way it explores an unknown subject. The researcher gives respondents the chance to state strong opinions, vent out frustrations and let the researchers know what have been overlooked.

The open-ended question was analyzed using content analysis method. Mitchell & Jolley, (2012) describes content analysis method as a method to categorize a wide

range of open-ended (unrestricted) responses. It helps to code open-ended question logically and systematically.

Cargan (2007) points out that content analysis systematically analyze and make inferences from text materials. A content analysis of answers to open-ended questions would reveal that the answer variations usually cluster around similar themes and can be coded into several type of answers that then can be analyzed with replies to closed-ended questions. He further highlights that each respondent was asked the exact same set of questions and this increases the reliability of the answers.

Therefore, the researcher analyzed the open-ended question by using content analysis method. The researcher started off reading through all the responses to see some trends in it. The responses were grouped into categories and reviewed to identify clear trends, issues and new ideas presented by respondents. The focus is on the meanings and contexts of responses. Finally the researcher match the groups with the themes from the interviews results to create more meaningful results based on the research.

### **Summary of Chapter**

This chapter comprises the discourse of research method, data collection and plans for data analysis as in Figure 3.3. The phase 1 base in the development of instruments is based on comprehensive review literature and that the interviews are to answer research question 1.

The second phase is based on the survey. The instrument given through the pre-test, reviewed by experts and in the pilot study before it is carried out in actual data collection among the targeted respondents and population. The data analysis describes the descriptive statistics and one –way Anova.

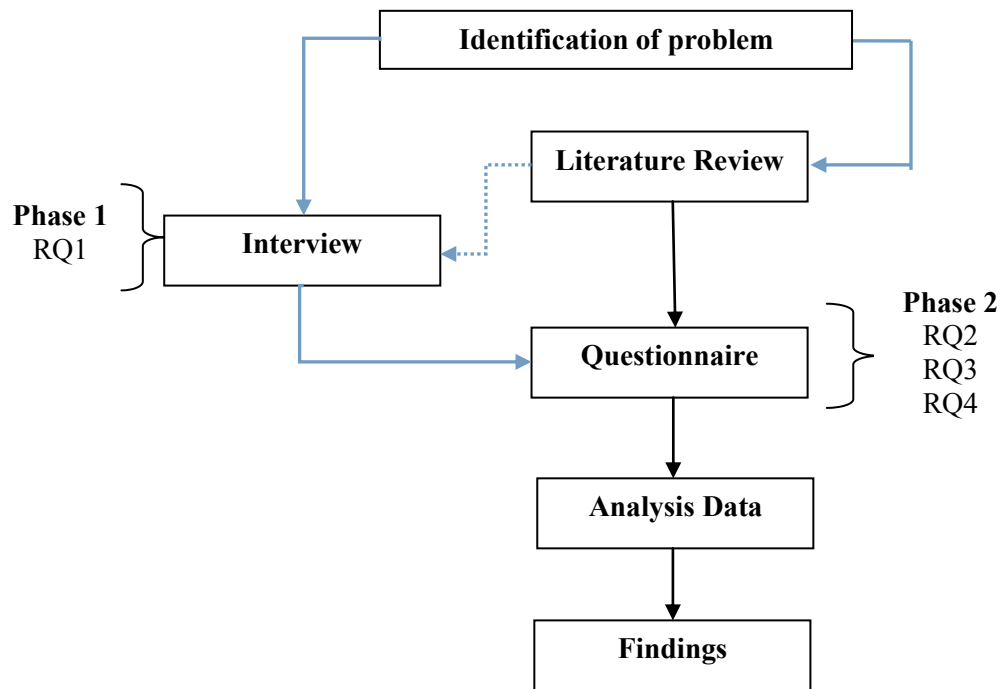


Figure 3.3 Research Design

## **CHAPTER 4**

### **FINDINGS AND DISCUSSION: PHASE I**

#### **4.0 Introduction**

The main aims of the study were to determine the readiness of the school librarians towards the implementation of information literacy (IL) in schools. It also investigates the factors that influence information literacy implementation in Malaysian schools (Section 1.5, pg. 11-12).

This chapter discusses the finding of phase one, the interview data. The interview data was analysed to identify issues in the implementation of IL in schools, specifically based on school librarians' perceptions and involvement in teaching IL. The themes that emerged will be discussed in this section. The broad themes are generally regarding the teachers' understanding about information literacy, information literate attributes and school librarians' perception about their roles as IL educators and their IL skills. These included factors influencing the IL implementation in schools, their teaching experiences and qualifications in the service.

In total, eight participants were involved in the interview. There were six secondary school librarians with working experience of at least ten years. They are all from Hulu Langat district. Two former school librarians became Education Officers in the Education Technology Division and Teachers Education Division.

The interviews were held at their respective school libraries and offices. The duration of each session was 1-1 ½ hours. They were audio recorded. The dialogues

were transcribed, coded and categorized into themes. Six themes emerged from the data. These themes included understanding IL, IL skills, IL attributes and school librarians' roles as IL educator, school librarians' qualifications and experience.

#### **4.1 A. School Librarians' Readiness**

##### **4.1.1. Understanding Information Literacy**

In the interviews, the data revealed that respondents were confused and unsure about the term 'information literacy'. They often believed that IL was ICT. They thought that ICT was IL and using ICT was the means to locate information (S1/b/c/97-103, S3/b/c/6-18 & S5/b/c/2). They mistook IL skills as ICT and computer skills as IL skills (S7/b/ILs/72).

Respondent S1 thought IL was study skills that could be applied through the usage of ICT such as the internet searching skills. These also include note taking, reading, writing and locating information skills (S1/b/c/97-103): “...*Information literacy is the students' study skills such as reading, writing, note taking, mind mapping and searching information using the internet*” (S1/b/c/97-103). She also viewed IL skills as presenting information (S1/b/c/116).

Respondent S3 believed that IL was based on ICT. “...*I do not find any answer other than ICT. I know that IL is more than ICT but I do not have any answer for it. ICT is only a method*” (S3/b/c/6-18).

Respondent S5 thought “...*Information literacy is information technology and computer literate*” (S5/b/c/2). She further explained that IL involves information

searching skills and is related to critical thinking (S5/b/c/54). She also referred to IL as reading skills (S5/b/c/8).

Respondent S6 also thinks that IL involves information skills using computers, such as OPAC in university libraries or through internet, to search for required information (S6/b/c/6). “... *I understand that information literacy is the skill to locate information using technology when I use OPAC in the university library*”.

There were also teachers who were clearly not able to explain IL. Respondent S4 did not know what IL is. She thought and felt that it is not easy to learn IL. It is also not used in the process of teaching and learning. She perceives it as a project for students to look up information (S4/b/c/7-8). She did not really know the term ‘information literacy’ (S4/b/c/9). In her opinion, IL is maybe included in the course but is not practical to use in the learning process (S4/b/c/30).

The comments seem to provide evidence that school librarians are unclear of and do not understand what IL is.

#### **4.1.2 Information literate attributes**

Once the teachers’ understanding of IL was ascertained, they were further probed to find out what they perceived as the attributes of an information literate person. For each of these school librarians, some of the setbacks were identified in their work in providing library services to teachers and students. The respondents were unclear about the IL attributes.



Respondent S5 was unsure of what an information literate person is able to do. She thought that IL is the ability to locate information through reading. She was more concerned about her capability of managing school libraries and if these skills were sufficient. She did not consider herself as information literate (S5/b/a/40). Her view as being information literate is the ability to assist teachers to locate information (S5/b/c/18).

Respondent S1 thought that information literate person's attributes are having study skills, reading skills, writing notes and building a mind map (S1/b/a/103). She mentioned that "*Information literate persons must have reading, counting and writing skills*" (S1/b/a/254). Using these skills, an information literate person is able to locate information and apply the skills using internet facilities (S1/b/a/103) integrated with library skills (S1/b/A/110).

Respondent S3 viewed an information literate person as accessing information through search engines and more often; this is done in school library. "*Teacher teaches how to locate information using search engine and internet* (S3/b/a/39)".

Only three of the school librarians were able to mention some of the attributes, such as the ability to recognize the need for information (S3/b/A/12), accessing sources of information through computer-based and other technologies (S1/b/c/102) and integrating information with existing knowledge (S5/b/a/40).

However, it is generally concluded that the school librarians were uncertain of the attributes of an information literate person. Therefore, the data indicated that

school librarians were unsure of information literate attributes as found by Rader (1991), Carr (1998) and Yusoff (2006).

#### **4.1.3 School librarians' role as information literacy educator**

During the interviews with the local school librarians, several respondents (S1, S2, S3 and S4) commented that their main role is to manage the school library as required by Ministry of Education.

Respondent S1 viewed that she is a teacher but at the same time, assigned to hold the position as a school librarian. Therefore, she is assigned to manage the school library (S1/b/rl/74). At the same time, she is to teach students to search for information online (S1/b/rl/77). *"It is not teachers who should manage the school library. I am a teacher as an education manager but I am also assigned to hold the position of school librarian. My responsibility is to manage the school library. As a school librarian, I have to guide the students to search for information required"* (S1/b/rl/74-77).

At the same time, respondent S2 added that her role as school librarian was to assist and facilitate teachers in using internet if the teachers required her help (S2/b/rl/47).

Respondent S4 also disagreed on teaching IL to her peers or students. She commented that: *"I disagreed that school librarians are to teach information literacy in school library. Moreover, the school library is not well equipped with computer facilities"* (S4/b/rl/36).

However, the interview results showed respondent S5 indicated that teachers and students would refer to personnel like her as the source of information and reference. She stressed that: *“Teachers would refer to me as the source of information (S5/b/rl/30-34). Teachers also refer to me as helping to guide students on how to use the computers” (S5/b/rl/36).*

Respondent S5 was more comfortable with her role as school library managers or administrators. She preferred to manage the school libraries and held school library activities and programmes (S5/b/rl/74). She was also not comfortable with the term information specialist (S5/b/rl/80).

On the other hand, she was also unclear about her role as a school librarian as she had too many responsibilities. She mentioned that: *“At times, I am not clear about my role as a school librarian. I have too many responsibilities and tasks (S5/b/rl/135). Although, I have fewer teaching responsibilities, I have other heavy workloads (S5/b/pro/151) and have to hold ‘relief classes’” (S5/b/pro/153).*

Respondent S5 felt that she was not competent or capable as an information manager or information specialist (S5/b/rl/76). However, she believed that school librarians are to provide resources (S5/b/rl/31).

Respondent S8 pointed out that school librarians are the manager of the school libraries. Their role is to assist students and teachers to obtain information (S8/b/rl/86). *“School librarians are the manager of school libraries. The students come to school library to obtain information. At times, students will encounter problems because they*

*do not have searching skills. When they do, they will seek help from school librarians. Since they are there managing the school library, school librarians must have that skill in order to help students and teachers get the information. They should know how to find information”.*

At the same time, she viewed that school librarians was not supposed to teach but instead, concentrate on the acquisition and processing the collections in the libraries (S8/b/rl/90). *“School librarians just thought that they are the manager the school library. They are not supposed to teach. They are only to select books, buy books, process books and manage the library but not to teach information literacy”*(S8/b/rl/90).

Similarly, respondent S7 believed that school librarians are just doing their job and carrying out their responsibilities. However, she emphasized that school librarians need to be specialized in their job. *“The ministry or the school level should place teachers with qualification and specializations suited to their job”* (S7/b/rl/21). However, at the moment, they are there mainly to run the core reading activities-NILAM (S7/b/rl/41).

Four respondents (S1, 2, 3 and 4) viewed that the school librarians’ role was to manage school library as most of them are involved in teaching and learning as subject teachers. At the same time, respondents S5 and S8 viewed that the school curriculum system is too exam-oriented; therefore, their role is to teach the subject they have specialized in. The school management would expect them to perform in their teaching

subjects. Lastly, respondent S8 pointed out that the recognition of school librarians of today is merely as the manager of school libraries (S8/b/rl/448).

Overall, the school librarians believed themselves as the manager of school libraries entrusted with facilitating learning. They show more concern about managing the school libraries. School librarians do not perceive their role as IL educator in schools as supported by Abrizah (1999), McCracken (2001), Raja Abdullah & Saidina Omar (2003), Singh et al., (2006), Branch & De Groot (2009), Hockersmith (2010), and Kamal & Normah (2012).

#### **4.1.4 Information Literacy skills**

During the interview, the school librarians were asked about what they know about IL skills. They described their IL abilities. Their responses pointed out these school librarians have limited knowledge of IL skills.

Respondent S4 estimated her IL skills as poor (S4/b/ILs/48). She admitted that she had learned about IL but never applied it. However she admitted that she truly did not understand what IL is (S4/b/c/15). At the same time, she did not agree to take up teaching IL (S4/b/rl/36). She thinks that teachers and school librarians should have IL skills before they are given the task to teach IL (S4/b/ILs/55).

Respondent S5 shared the same opinion as S4 in that she did not feel confident about her IL skills (S5/b/ILs/80). She admitted that she had limited knowledge of IL skills (S5/b/ILs/286). In spite of this, respondent S5 made herself available to helping

guide teachers and students find and locate information through internet searching tasks (S5/b/ILs/505).

At the same time, respondent S7 felt that, though school librarians have IL skills, they at the same time require IL instructions or pedagogy training in IL or LIS. She pointed out that: *“... actually teachers or school librarians have the information literacy skills but they don’t know that if that the skill which they should use to teach the students. They have the skills for their own use but they do not know how to apply it to teach students. They do not know information literacy instructions or they lack pedagogy training in information literacy”* (S7/fa/TLIS/6).

At the same time, not many school librarians or educators are open to the idea of ILE (S7/b/ILs/72) she emphasized that many head teachers need to be aware that school librarians need IL skills as well as ICT skills (S7/b/ILs/39).

Respondent S8 regarded that IL that information skill as an important element for students to produce their project paper (S8/b/ILs/84). School librarians need information skills, as they are the source of information (S8/b/rl/86). However, she mentioned: *“So I think I can say that about 30% of school librarians really have the information literacy skills. They are willing to help the students. Another 70 % of school librarians stress on their job. They don’t have time to entertain or to help students “*(S8/b/rl/90). Then, respondent S8 mentioned that she learned from IL workshops (S8/b/ex/110).

According to respondent S1, her understanding of IL skills consists of writing and locating information skills. She is able to locate information using online. This is not a problem as she has a Bachelor in LIS (S1/b/c/100).

Overall, the three respondents admitted that they have limited knowledge of IL skills. They learned about IL but are less keen to teach IL. They have different opinions about agreeing to teach IL skills in schools as supported by Morizio & Henri (2003), Sit (2003), Bastos (2006), Church (2008), Combes (2008), Tan & Singh (2008), Reed (2009) and Tan, Gorman & Singh (2012).

#### **4.1.5. School Librarians' Professional Qualifications**

The interview data revealed that Library and Information Science (LIS) qualifications are important in equipping school librarians with the knowledge and skills to manage school libraries. Respondent S1 believed that it is not the teachers' role to manage school libraries without LIS professional qualifications. She mentioned that: *"Frankly, it is not teachers' role to manage school library without LIS qualifications"* (S1/fa/qua/71). She viewed that teachers-cum-school librarians would be able to teach and facilitate ILE if they are provided with information literacy training.

During the interviews, respondent S2 implied that professional school librarians or librarians with LIS qualifications should manage school libraries (S2/fa/qua/49). She felt that school librarians with LIS qualifications would manage school libraries better and provide information services more effectively (S2/fa/qua/52). However, the respondent also felt that the career advancement for school librarians is limited to school libraries. School librarians may need some sort of career incentives so that they

are able to achieve satisfaction in their career as school librarians in school (S2/fa/qua/53). The career advancement for school librarians is unclear to them. They can only see themselves as school librarians in schools. The promotion path as school librarians does not exist (S2/fa/qua/55). The feeling is that these teachers should be given opportunity to further their study in LIS to enhance their roles as school librarians (S2/fa/qua/59).

Respondent S8 thought that school librarians should unite and affirm the need for teachers take up school librarianship professionally. This needs the preparation of paperwork and *red tape* to train school librarians, which necessitates collaborations between divisions in the Ministry of Educations. She commented that: *“Teachers’ demands are important. They are school librarians. They should unite and propose to the division (ETD) that it is important for them to take up school librarianship to become professional school librarian”* (S8/fa/qua/208).

Respondent S6 also mentioned that there is lack of career advancement for school librarians in schools or in teaching profession (S6/fa/ca/104). Respondent S2 felt that teachers should be given opportunities to further studies in LIS. *“I don’t have any LIS basic knowledge. Can I study LIS? I don’t get any information about this* (S2/fa/ca/69).

Respondent S3 felt that school librarians need LIS training and qualifications before they are assigned as school librarians. There is a need for LIS qualification guidelines for school librarians. School librarians must have at least a LIS basic degree before they are placed in school (S3/fa/qua/91”).



Thus, school librarians desire to have some kind of training in LIS and LIS qualifications. They are also looking forward to open opportunity of career advancement as school librarians as supported by Slyfield (2001), Moore & Trebilcock (2003), Blandford (2003), Belisle (2005), Vega (2006), Luberman, et al, (2006), Williams and Coles (2007), Farmer (2007) Stigler & Hiebert, (2009) and Branch & Farmer (2009).

#### **4.1.6. School Librarians' Experience**

The interview findings showed that respondents' experience helps them to have a clearer knowledge about IL.

Respondent S5 stated that her work experience had helped her to perform her job better. She stated that: *"When I first held the position of school librarian, I did not know much about my work. I learned through experience (S5/b/ex/388). My work has become more organised and I am able to help more teachers. I am able to identify information needed and find the sources of information (S5/b/ex/390). Therefore, I am more confident when I am more experienced to serve the teachers"* (S5/b/ex/394).

Therefore, the findings indicated school librarians' experience can support their knowledge about IL as supported by Farmer (2007).

#### **Summary**

In general, school librarians are unclear about what IL is. They are unsure of information literate attributes. They perceive their role as school library managers rather than IL educator. They feel they need training in LIS and LIS qualifications. They also

have limited IL skills. Thus, it is revealed that school librarians are experiencing a lot of uncertainty in their role as IL implementers. The school librarians' readiness to implement IL could play a major role in the successful implementation of IL in school. This study will further explore this issue on a broader scale.

## **4.2 B. Organizational Factors**

### **4.2.1 Factors influencing information literacy implementations**

The second part of the interview was to determine other factors, besides the school librarians' readiness, that may influence IL implementation in schools. Interviewees were asked to talk about organizational factors that are pertinent to the successful implementation of IL.

The interview data revealed that IL implementation was unclear in school. Since most interviewees reported that IL was not fully implemented in their schools, the interview then focused on their opinions on why such situations arise. Several factors such as policies, standards, curriculum, professional development and infrastructure were revealed as pertinent factors in the implementation of IL.

#### **4.2.1.1 Policies**

During the interview, school librarians were unsure about the IL implementations in schools. According to them, there were no IL policies or guidelines or any directives to implement IL. In addition, there is no national IL agenda. They implied that there is a need for an official IL policy to ensure successful implementation.

Respondent S3 stated; *“The education ministry, divisions, state level and school management need to have Information literacy policy and guidelines to put it into practise. However, there is none that I can find in school”* (S3/fa/Imp/64).

Sharing the same view, respondent S6 also stressed that she did not find any IL policy or guidelines in her school. She had not heard of the national IL agenda. She stated *“If we want to implement information literacy, we need a formal policy and guideline or even a national information literacy agenda. This would help to implement information literacy officially. At the moment, I cannot find it in schools or have heard of it”* (S6/fa/Imp/78).

On the other hand, respondent S8 believed that IL elements can be found in our education policy though there is no IL policy officially. She stated *“I think information literacy elements are already in our education policy. They can be concealed or directly stated in our education policy. It is not fully understood. However, we do not have an official information literacy policy as per say”* (S8/fa/Imp/437).

Respondent S7 stated that there is no formal directive to implement IL in schools. She stressed that the directive from mid-to-bottom approach may work better in ILE implementation (S7/fa/Imp/55), but at the same time, we should change our way of thinking or mindset that school library can be managed as a business (S7/fa/mane/88). A better-managed school library will provide a solid platform for the implementation.

The school librarians were not aware of any official IL policies, guidelines or directives from the education ministry in schools. Thus, without any official IL policies,

guidelines or directives from the education ministry, the implementation will not be accomplished. It needs top-to-bottom directives approach to put IL implementation into effect as supported by Bruce (2002), Oldford (2002), Boekhorst (2003), Morizio & Henri (2003), Edzan (2008), Edzan & Mohd Sharif (2005), Russell (2005), Lonsdale & Armstrong (2006), Singh, et al., (2006), Horton & Keiser (2008), Horton (2008), Horton & Keiser (2008), and Williams (2008).

#### **4.2.1.2 Standards**

The interview results revealed that school librarians were keen to have national IL standards as well as IL standards for students.

Respondent S1 viewed that there is a need for IL standards as benchmark for the students and school librarians' information skills. She stated: "... *It is difficult to implement information literacy as there is no benchmark or guidelines to assess the information literacy skills of students*" (S1/fa/Std/161).

At the same time, respondent S8 viewed that we need the IL standard to compare and put on par with IL international levels. She viewed that: "... *There is a need for a national standard for information literacy. We need to reach a certain level of benchmark when we need to at par with the information literacy international standard. There is a need for a standard for school librarians and students too*" (S8/fa/Std/441).

Respondent S4 also believed that we need an IL standard as the criterion and guide to set the level of IL in the country. She viewed: "... *We need to set a certain criterion for school librarians and students to evaluate in order to see if they reach the*

*benchmark of information literacy standards locally as well as internationally”*  
(S4/fa/Std/81).

It is obvious that school librarians were not aware if there are any IL standards for school librarians or students. Therefore, there is a need for national IL standards for students to place a certain benchmark for their IL knowledge. This is to ensure successful implementation of IL as supported by Fatimah (2002), Eisenberg, et al., (2004), Bailey (2005), Edzan & Mohd Sharif (2005), Bailey (2005), Aiani, (2008) and Cornelius (2009),

#### **4.2.1.3 Teaching and Learning Strategies**

During the interviews, the school librarians also discussed IL instructions (pedagogy). They discussed the teaching and learning strategies of IL and integrating IL into curriculum.

#### **Teaching Information Literacy**

In the same context, they also discussed teaching methods involved in the IL implementation. Likewise, they discussed the implementation of IL in the education curriculum, the collaboration of teaching IL, the integration of IL into curriculum within subjects, teaching it as a separate subject within the school curriculum or teaching it as a set of library-based skills.

Respondent S1 was unclear about IL implementation in school. ILE or IL skills are not a teaching subject in school. *“We have subjects like History and Civics but we do not have information literacy as a teaching subject in school* (S1/fa/TeIL/11).

*...School librarians have time table and teaching subjects but they do not teach information literacy (S1/fa/TeIL/13)”.*

She further said that “... *I do not know when or how to apply information literacy in my teaching process. I do not know how to place it in my timetable as there is no directive to do so (S1/fa/TeIL/25-26)”.* “... *I am also not sure if there is a need to teach information literacy skills (S1/fa/TeIL/29).*

More interview data revealed that respondent S1 was unsure as to who was responsible to teach IL in school. “... *I am also confused and do not know who is suppose to teach information literacy skills in school (S1/fa/TeIL/213).*

#### **Integrate information literacy into curriculum within subjects.**

The results revealed that respondent S1 found IL guidelines and syllabus in her former school library. She mentioned that; “... *I found Teaching and Learning Guidelines for School Resource Centre Usage and Information Skills (Bahagian Teknologi Pendidikan, 2002a) and its syllabus and specification for Primary Year 1-6 (Bahagian Teknologi Pendidikan, 2002b) in my former school library. Information literacy was like a short-term plan as it was not being carried out” (S1/fa/Imp/197).*

On the other hand, respondent S8 suggested that IL is being introduced and integrated into subjects (S8/fa/edu/142). Similarly, respondent S6 viewed that ILE in Malaysia is not structured. It may be considered as concealed or embedded or integrated in the subject and IL skills indirectly in the subjects (S6/i/cur/82).

There is a need for ILE implementation strategy to implement it successfully (S2/fa/Po/7). It has to be in the curriculum but Education Planning, Research and Development needs to make the move to make this a component in the education policy (S7/F/Po/60). Related to these issues, respondent S5 also agreed that there were no signs of ILE implementation (S5/fa/Imp/249) but suggested that ‘top-to-bottom’ ILE implementation approach is better (S5/fa/Imp/245) as supported by Dearden (1984), Buckley and Caple (1990), Ford & Kozlowski (1997), Rae (2001), Carliner (2003), Lee, et al., (2003), Raja Abdullah & Saidina Omar (2003), Rothwell (2008), Norhayati (2009) and Duke & Ward (2009).

#### **4.2.1.4 Professional development**

School librarians are keen to attend IL courses, training in LIS and professional development. However, they desire to have some sort of LIS training or certain LIS qualifications to assist them in their school library management.

#### **Information literacy courses**

The data from the interviews revealed the respondents suggested that school librarians need IL skills training. Respondent S1 claimed that school librarians lack IL training; *“I am have very little information literacy knowledge. I need some basic information literacy training”* (S1/fa/ TeIL/142).

This view is supported by respondents S5 and S7, as both share similar opinions. Respondent S5 had yet to attend any form of IL training. She mentioned that: *“I lack information literacy training or SRCM course. I would like to attend some kind of*

*information literacy courses. Is there any information literacy course available?”*  
(S5/fa/ TeIL/82-85).

Respondent S8 supported that IL is not a priority as it is not a learning subject in school curriculum. It is not a critical subject. It is not required by everyone. Therefore, it is not important (S8/Edu/cur/289).

At the same time, respondent S7 revealed that the officers in ETD division need to be aware and know the importance of ILE in school. She viewed: “... *I hope that we can do more for information literacy. I think we need someone that can see elements needed for information literacy. This is especially so of our director who needs to understand what information literacy actually is* (S7/fa/TLIS/19)”.

### **Training in Library and Information Science**

Respondent S7 further stressed that MoE is not emphasizing school libraries or any LIS training (S7/fa/Po/57) as a criterion as school librarians. She stressed: “...*it is because we are not given prominence. When you are not given it, you are not given enough staff and finance. LIS training and school libraries are considered as secondary. They are only to support the curriculum. School libraries support curriculum. We should gain more privileges than that* (S7/fa/Po/57).”

On the other hand, there were plans of collaborations to train school librarians within divisions such as TED and ETD (S8/fa/qua/208). There were efforts of training school librarians in LIS with the TED but they have stopped. The teachers’ training



institute offers 14 weeks of SRCM courses and one year of SRCM courses to teachers (school librarians) but there were no applicants.

Respondent S8 mentioned that: “... *Darul Aman Teachers Training institute offered 14 Weeks SRCM courses and one year SRCM courses to teachers but teachers (school librarians) refused to attend (S8/fa/TLIS/196)*”.

Currently, school librarians are trained by Teacher Activities Centres as well as State Education Technology Department (S7/fa/TLIS/13).

According to respondent S8, many school librarians may not have any basic training in LIS (S8/fa/TLIS/182) except the minimum SRCM 35 hours and SRCM 45 hours. At the moment, school librarians are trained to manage school libraries only (S8/fa/TLIS/166). On the other hand, there are not many school librarians or teachers who are keen to take up LIS as a potential subject for their career advancement (S8/fa/TLIS/196). At the same time, respondent S8 felt that there must be a demand for LIS courses from school librarians themselves. School librarians with LIS qualifications themselves should make full use of their qualifications for career advancement (S8/fa/Ca/210).

She further stressed that MoE should to provide LIS or school librarianship undergraduate course for non-graduates and post-graduate courses in LIS to teachers and school librarians (S8/fa/TLIS/386). She also felt that there is a need to have LIS experts in ETD (S8/fa/TLIS/305) for further development of school libraries and school librarians.

At the same time, school librarians need to be unified and submit a memorandum to show the necessity for teachers to take up school librarianship professionally. The MoE needs to plan paperwork and red tape and who to train school librarians. The collaborations between divisions in the ministry will establish the partnership to train and develop the importance of school librarianship in school education (S8/fa/TLIS/208).

Therefore, interview results revealed that school librarians need training in IL and LIS training. Various divisions in the ministry of education need to collaborate in order to train and improve the school librarians' knowledge in LIS and their qualifications. School librarians need to have optimistic opportunity in their career as supported by Doyle, (1992), Fatimah (2002), Merchant & Hepworth (2002), Asselin (2004), ETD, (2005), Bushong and Buff (2008), Horton (2008), Tan & Singh (2008a) and Norhayati (2009).

#### **4.2.1.5 Infrastructure**

Accordingly, respondent S1 believed that school library functions as an information centre (S1/fa/Inf/265). However, the interview results revealed that computer facilities in respondent S1's school library were recycled and computers from the computer laboratories were used (S1/fa/Inf/314). She mentioned: "*My school library functions as an information centre*" (S1/fa/Inf/265). "*...We have three computers, one for OPAC/server, one for EDUWED and one for all purposes. All those computers were recycled computers*" (S1/fa/Inf/314-316).

At the same time, respondent S2 stated that she has four computers in her school libraries (S2/fa/Inf/83). Respondent S4 also complained that there are not enough facilities (S4/fa/Inf/40) to assist any online IL skills training as the computer laboratories are for ICTL subject lessons (S4/fa/Inf/39). Respondent S4 mentioned: “...*It is not easy to learn or to teach information literacy in my school as there are not enough computer facilities in my school. There are 3300 + students. The morning session is about 2000 students and afternoon session is 1300 students. The school could not provide enough computers facilities to all students. The computer facilities are used to teach ICTL only*” (S4/fa/Inf/39-43).

Respondent S7 notes that there are problems regarding the school library of infrastructure, such as the lack of electricity facilities in certain areas in the country, a need to upgrade the computers in schools and improve book collections in the school library (S7/fa/Inf/84). At the same time, MoE or ETD places less emphasis on IL compared to ICT (S7/fa/inf/43). As infrastructures, it would be worthwhile if everyone shares resources such computers to minimize cost as computers are still considered expensive locally (S7/fa/Inf/78).

According to respondent S8, school librarians ought to have the initiative to explore more educational websites, information sources online (S8/fa/Int/407). This will improve their knowledge on online resources (S8/fa/Ic/403).

Similarity, results from the interviews showed that overall, the school libraries are provided with basic infrastructure but many schools have similar problems in that they do not have enough classrooms and computer facilities. As they perceive that the

concept of IL is heavily based on ICT, the lack of computers facilities and classrooms becomes a barrier as supported by Henri, Boyd and Eyre (2002), Harada (2003), Lasic-Lazic, Spiranec & Banek-Zorica (2006), Singh, et al, (2006), Williams and Coles(2007), Abrizah (2008), Todd (2008), Intan Azura, et al,(2008) and Campello (2009a).

## **Summary**

The issues arising from the interviews were the school librarians' readiness and organizational factors influencing the IL implementation. School librarians were generally unclear about the meaning of IL, what constitutes IL skills, IL attributes and the school librarians' role as IL educator. Their perceptions seem to differ based on their qualifications and experience. These issues reflect school librarians' readiness to implement IL. There is a need to further empirically investigate on a larger scale about SLs' readiness for IL implementation.

The organizational factors influencing IL implementation includes policies and standards. The school librarians explain about policies and standards as the guidelines for IL implementation. Thus, it is considered as single factor. Other factors are teaching and learning strategies, professional development and infrastructure. Thus, the second phase of the study will design a survey instrument that will address these two issues (Table 4.1). From the interview findings, the researcher proposed Figure 4.1 as school librarians' readiness framework. Thus, the success of IL implementation requires both school librarians' readiness, complemented by the organizational factors.

## Information Literacy Implementation Framework

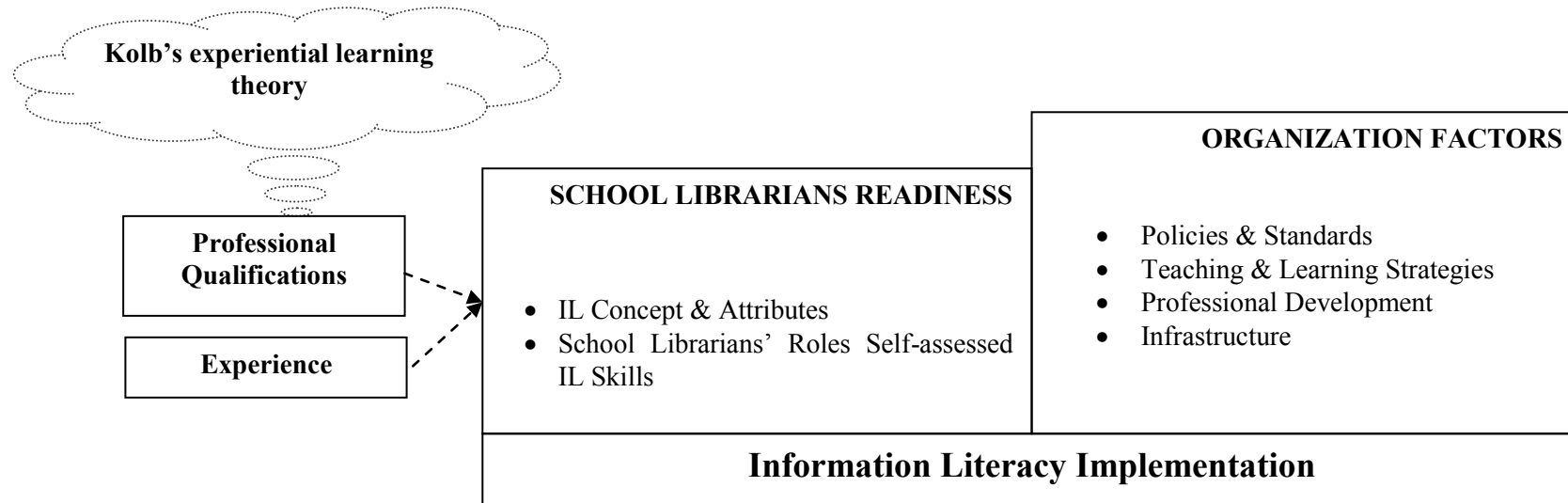


Figure 4.1 Conceptual framework of the study

Table 4.1 Operational Table

Issues	Operational	Research	Items
<b>1. General perception</b>	Implementation of IL in schools		
<b>2. Readiness</b>		McCain and Tobey (2004), Hersey, Blanchard, & Johnson (2001), Strohschen & Elazier (2009). Diao & Chandrawati (2005) Education Technology Division (2005), Norhayati, Nor Azilah, & Mona (2006), Probert (2009), Norhayati (2009), Che Normadiah (2001), Singh, et al., (2006) Carr (1998), Yusoff (2006), Rader (1991)	12 items
<ul style="list-style-type: none"> <li>Knowledge about IL</li> </ul>	<ul style="list-style-type: none"> <li><b>IL concept</b> Q7. Information literacy is a set of skills that can be learned Q8. Information literacy enables us to access, evaluate and use information from a variety of sources.</li> <li><b>Information literate attributes</b> Q9. The information-literate person recognizes accurately the information needed. Q10. The information-literate person recognizes the need for information. Q11. The information-literate person formulates questions based on information needs. Q12. The information-literate person identifies potential sources of information. Q13. The information-literate person develops successful search strategies. Q14. The information-literate person accesses sources of information through computer-based and other technologies. Q15. The information-literate person organizes information for practical applications. Q16. The information-literate person integrates information found with existing knowledge. Q17. The information-literate person uses information in critical thinking. Q18. The information-literate person uses information in problem solving.</li> </ul>		

Table 4.1 Continued

Issues	Operational	Research	Items
<ul style="list-style-type: none"> <li>Attitude –role as IL educator</li> </ul>	<ul style="list-style-type: none"> <li><b>Perception about School Librarians roles</b></li> <li>Q19. A skilled school librarian with information literacy expertise has knowledge of resources.</li> <li>Q20. School librarians train teachers during in-house training programmes to incorporate information literacy knowledge.</li> <li>Q21. School librarians play a leadership role in educating students on the importance of information literacy skills.</li> <li>Q22. School librarians perform as information specialists.</li> <li>Q23. School librarians provide reference services in school libraries.</li> <li>Q24. School librarians view their role as supporting teachers and students.</li> <li>Q25. School librarians view their role as providing information.</li> </ul>	<p>Hockersmith (2010), Church (2008), Gbaje (2008), Novo &amp; Calixto (2009), Reed (2009), Lee, Reed &amp; Lavery (2012), Bahagian Teknologi Pendidikan (2007), Fatimah, (2002), Yusoff (2006), Education Technology Division (2005), McCracken (2001), Morizio &amp; Henri (2003) Singh et. al., (2006), AASL/AECT (1998), Raja Abdullah &amp; Saidina Omar (2003), Abrizah (1999), Intan Azura et al, (2007), Branch &amp; De Groot (2009)</p>	7 items
<ul style="list-style-type: none"> <li>IL skills</li> </ul>	<ul style="list-style-type: none"> <li><b>Self-assessed information literacy skills.</b></li> <li>Q26. Define the information task (define the information needed).</li> <li>Q27. Identify information needed (to solve the information problem).</li> <li>Q28. Determine all possible sources of information.</li> <li>Q29. Select the best sources of information.</li> <li>Q30. Locate sources intellectually and physically.</li> <li>Q31. Search for information using Booleans operators (AND, OR, NOT).</li> <li>Q32. Search for information using the keyword search and alternative keyword search.</li> <li>Q33. Find information within sources.</li> <li>Q34. Extract relevant information from information source.</li> <li>Q35. Synthesize information found in the sources.</li> <li>Q36. Organize information from multiple sources.</li> <li>Q37. Present the information found.</li> <li>Q38. Judge the effectiveness of the information found to carry out the task.</li> <li>Q39. Judge the efficiency of the information process.</li> </ul>	<p>Combes (2008), McCoy (2001), Tan &amp; Singh (2008), Hockersmith (2010), Church, (2008), Gbaje (2008), Novo &amp; Calixto (2009), Reed (2009), Tan, Gorman &amp; Singh, (2012), Blevins (2004) Church (2007), Morizio &amp; Henri (2003), Sit, (2003), Bastos, (2006).</p>	14 items

Table 4.1 Continued

Issues	Operational	Research	Items
<b>3. Implementation</b>	<b>Factors influencing /affecting IL Implementation</b>		
<ul style="list-style-type: none"> <li>Policies &amp; Standards</li> </ul>	<p>Q51 An IL education policy for school librarians</p> <p>Q52 An IL education guideline for school librarians</p> <p>Q53 A National IL standard</p> <p>Q54 IL standards for students</p> <p>Q55 LIS certification for school librarians</p> <p>Q56 School librarians attend IL training.</p> <p>Q57 A standardized IL training curriculum for school librarians</p> <p>Q58 Standardized IL training modules for school librarians</p> <p>Q59 Continuing education opportunities in LIS for school librarians</p>	<p>Edzan (2008), Edzan &amp; Mohd Sharif (2005), Horton &amp; Keiser (2008) Horton (2008), Abid (2004), Horton &amp; Keiser (2008), Lonsdale &amp; Armstrong (2006), Bruce (2002), Morizio &amp; Henri (2003), Henri, et al., (2006), Önal (2006), Russell (2005), Singh, et al., (2006), Williams (2008), Boekhorst (2003), Oldford (2002).</p> <p>Eisenberg, et al., (2004). Bailey (2005), Aiani, (2008), Fatimah (2002), Edzan &amp; Mohd Sharif (2005), Bailey (2005), Cornelius (2009), American Association of School Librarians and Association for Educational Communications and Technology (1998). American Association of School Librarians [AASL] (2007), Association for Teacher-librarianship in Canada (ATLC) and the Canadian School Library Association (CSLA) (1997)</p>	9 items



Table 4.1 Continued

Issues	Operational	Research	Items
<ul style="list-style-type: none"> <li>Teaching &amp; Learning Strategies</li> </ul>	Q45. Integrate IL into curriculum within subjects Q46. Teach IL as a separate subject within the school curriculum Q47. Teach IL as a set of library-based skills Q48. Teach IL in the school resource centre Q49. Integrate IL into the Information and Communication Technology Literacy (ICTL) subject Q50. A national IL agenda	Dearden (1984), Buckley and Caple (1990), Ford & Kozlowski (1997), Rae (2001), Rothwell (2008), Carliner (2003), Tannenbaum, Mathieu, & Cannon-Bowers (1991), Lee, et. al., (2003), Norhayati (2009), Raja Abdullah & Saidina Omar (2003), Williams & Coles (2007), Church (2007), Coatney (2006), Yitzhaki and Anzenberg (2005), Oberg (2001), Probert (2006), Doyle (1992) Duke & Ward (2009), Probert (2006), Probert (2008), Eisenberg (2006).	6 items
<ul style="list-style-type: none"> <li>Professional Development</li> </ul>	Q40 School librarians attend IL courses Q41 School librarians attend IL professional development Q42 School librarians learn IL instruction (pedagogy) on how to teach students Q43 School librarians collaborate with subject teachers to plan and teach IL in classroom Q44 Implement IL in the education curriculum	Blandford (2003), Leberman, McDonald, & Doyle (2006), Stigler & Hiebert (2009), Church (2006), Clyde (2004, 2005), Probert (2006), Slyfield, (2001), Coatney (2006), Belisle, (2005), Moore & Trebilcock (2003), Williams and Coles (2007), Clyde (2004, 2005), Vega (2006), Branch & Farmer (2009), Farmer (2007), Oldford (2002).	5 items

Table 4.1 Continued

<ul style="list-style-type: none"> <li>Infrastructure</li> </ul>	<p>Q60. Information technology facilities in schools.</p> <p>Q61. School libraries function as information centres. centres</p>	<p>Abrizah (2008), Singh, et al., (2006), Henri, Boyd and Eyre (2002), Williams &amp; Wavell (2002), Bruce (2002), Combes (2005), Todd (2008), Harada (2003), Intan Azura, et al., (2008), Campello (2009a), Williams and Coles(2007), Lasic-Lazic, Spiranec and Banek-Zorica (2006).</p>	<p>2 items</p>
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## **CHAPTER 5**

### **PHASE II: RESULTS AND DISCUSSION**

#### **5.0 Introduction**

The main aims of the study were to determine the readiness of the school librarians towards the implementation of information literacy (IL) in schools. It also investigates the factors that influence IL implementation in Malaysian schools (Section 1.5, pg. 11-12). The study explores the school librarians' readiness in terms of cognitive, functional and technical readiness for the information literacy education (ILE) implementation. The ILE implementation includes the issues of information literacy policies and standards, teaching and learning strategies as well as professional development and infrastructure.

#### **5.1 Description of Sample Data**

The population involved in this study was the school librarians in secondary schools in Malaysia. This research used quota sampling technique for the survey. The researcher sent out 656 questionnaires with the expectation of 326 responses. However, due to good response, seven hundred and ten school librarians participated in the survey. Some school librarians may have made copies of the questionnaire to be distributed to more than one teacher involved in the library administration. This represents 32.43% of school librarians' population in the country (Kementerian Pelajaran Malaysia, 2009).

### 5.1.1 Respondent profile

The respondents were all teachers in secondary schools and held the position as school librarians. These teachers have at least a basic degree in their respective specializations such as certificates, diplomas, or degrees in Education. They have at least three years of teaching experience prior to becoming a school librarian. The composition of school librarians from 13 states, including federal territories are as shown in Table 5.1.

Table 5.1 Distribution of respondents by states  
( $n = 710$ )

	State	Frequency	Percent
1	Perak	100	14.1
2	Selangor	76	10.7
3	Pahang	72	10.1
4	Kelantan	35	4.9
5	Johor	68	9.6
6	Kedah	50	7
7	WP Labuan	4	0.6
8	Melaka	22	3.1
9	Negeri Sembilan	29	4.1
10	Pulau Pinang	39	5.5
11	Perlis	7	1
12	Terengganu	37	5.2
13	WP KL	50	7
14	Sabah	51	7.2
15	Sarawak	67	9.4
16	WP Putrajaya	3	0.4
	Total	710	100

The use of non-random quota sampling technique guaranteed the proportion of representation from the sample, as advised by Panneerselvam (2004), Blaikie (2009),

Kumar (2011) and Bryman, (2012). The highest numbers of respondents were from Perak (100, 14.1%), Selangor (76, 10.7%), and Pahang (72, 10.1%). The lowest numbers of respondents were from small states such as Perlis (7, 1%), Wilayah Persekutuan Labuan (4, 0.6%), and Wilayah Persekutuan Putrajaya (3, 0.4%). These numbers fulfilled the proportion of representations of relevant subgroups within the samples.

Most of the schools had good infrastructure facilities. There were 695 (97.9%) schools with 24 hours electricity supply. A total of 662 (93.2%) schools had computer facilities and another 641 (90.3%) schools have internet facilities. Since Malaysia had 15.355 million internet users in 2009 and was ranked as the 26<sup>th</sup> in comparison to the other countries in the world (Central Intelligence Agency, 2011), these facts confirmed that the mentioned facilities are widely available in the country.

### 5.1.2 Teaching Experience

As seen in Table 5.2, the teaching experience of the respondents ranged from 3 months (0.3 years) to 35 years, while the experience as school librarians ranged from 0 to 28 years.

Table 5.2 Experience of respondents

(*n* = 710)

Experience	Min	Max	Mean
Teaching Experience	0.30	35.10	12.56
School librarian Experience	0.00	28.00	4.23

The average numbers years of teaching experience were 12.56 years, while the average number of years of experience as a school librarian was 4.23 years. Thus, it can be considered that the respondents were experienced as teachers, but not very experienced as school librarians. The duration of teaching experience of the respondents is shown in Table 5.3

Table 5.3 Teaching experience of respondents

( $n = 710$ ).

Length of teaching experience	Frequency	Percent
a. 0 - 5 years	129	18.20
b. 6 - 10 years	183	25.80
c. 11 - 15 years	166	23.40
d. 16 - 20 years	124	17.50
e. Above 21 years	108	15.20
Total	710	100.0

As seen in Table 5.3, the length of teaching experience was evenly distributed. A slight majority had 6 to 15 years experience. This is consistent with the earlier finding (Table 5.2) where the mean was 12.56 years.

### 5.1.3 School librarians' Experience

School librarians' experience refers to the length of time the teacher has been appointed as the schools librarian at the respective school. The range of years of experience as a school librarian of the respondents is shown in Table 5.4

Table 5.4 School Librarians' experiences

(n = 710)

Length of School librarians Experience		Frequency	Percent
a.	0 - 5 years	513	72.30
b.	6 - 10 years	139	19.60
e.	11-30 years	58	8.20
Total		710	100

As in table 5.4, a majority of these school librarians have less than 5 years of experience as school librarians (72.30%). The number of school librarians decreases as school librarians' experiences increases. Generally, the results indicate that the school librarians have more teaching experience as compared to their experience as school librarians.

#### 5.1.4 School Librarians' Professional Qualifications

The school librarians' qualification includes the in-service SRCM courses and LIS qualifications at Diploma, Degree or Masters Level. Table 5.5 shows the distributions of SRCM courses and LIS qualifications of respondents.

Table 5.5 SRCM Courses and Qualifications in LIS

(n = 710)

Courses in LIS		Frequency	Percent
a.	None	259	36.50
b.	SRCM 35 hours Course	413	58.20
c.	SRCM 45 hours Course	146	20.60
d.	In-service SRCM14 weeks Course	64	9.00
e.	In-service SRCM One year Course	23	3.20
f.	Diploma in LIS/ Educational Technology	22	3.10
g.	Bachelors Degree in LIS / Educational Technology	23	3.20
h.	Masters in LIS / Educational Technology	12	1.70

As evident in Table 5.5, a large number of respondents who hold the position as school librarians have not attended any SRCM courses or possess any LIS qualifications (36.50%). A majority of the respondents have attended SRCM 35-hours courses (58.20%). These may be due to the massive emphasis of Teacher Education Division (TED) on providing school librarians with at least SRCM 35 hours' course. These courses are held regularly and annually.

The numbers of school librarians attending courses such as In-service SRCM 14 weeks was lower and as for courses of one year, only 12.20% have attended. These indicate that the number of school librarians attending these courses has decreased and those who have attended did so for knowledge and to add to their resume. They may have held these qualifications when they signed up for the teaching professions or they did the courses to further their studies while holding the post of school librarian.

In view of the fact that school librarians in Malaysia hold the minimum LIS qualifications, that is, the Basic Thirty-five Hours SRC Management Course, there is a need to improve the continuity education of LIS for school librarians. More often, school librarians may need to find out where to further their LIS education at Bachelor's degree level or higher and also its recognition by the Public Services Commission.

Overall, it can be summarized into 4 levels of qualifications. The distributions of In-service SRCM courses and tertiary LIS qualifications are found in Table 5.6



Table 5.6 Short Courses and Qualifications in LIS

 $(n = 710)$ 

<b>Courses in LIS</b>	<b>Frequency</b>	<b>Percent</b>
a. None	259	36.50
b. In-service SRCM courses less than one semester	351	49.40
c. In-service SRCM courses one semester or more	59	8.30
d. Tertiary levels in LIS	41	5.80
Total	710	100

As seen in Table 5.6, almost half of the respondents (49.40%) have attended In-service SRCM courses for less than one semester. A smaller number of respondents attended the In-service SRCM courses for one semester or more (8.30%) and tertiary levels (5.80%). However, there are a substantive number of respondents (36.50%) who have not had any formal qualification in school library management.

The data in Table 5.5 and 5.6 do not correspond. In Table 5.5, respondents reported more than one type of qualification, thus resulting in higher numbers for each category. On the other hand, in Table 5.6 only the higher level qualification is taken into account.

## 5.2 Data Analysis

The data were analysed using the Statistical Package for the Social Science (IBM SPSS Statistics 18). The data were filtered and tested for in descriptive and inferential analysis as Figure 5.1. A variety of methods were used to analyze the data. Survey items were analyzed in a variety ways to ensure validity and reliability.

For the School Librarian Readiness section, a factor analysis was conducted to force the variables into three constructs: a).Cognitive Readiness, b).Functional Readiness and c).Technical Readiness. The variables were also analyzed using the descriptive analysis. This allowed the mean and standard deviation to be calculated for responses of each survey item and each construct. One-way Anova analysis was conducted in response to research question 3.

For the Organizational Factors section, a descriptive analysis was conducted to illustrate the section. The open-ended question responses were coded, grouped, themed and analyzed.

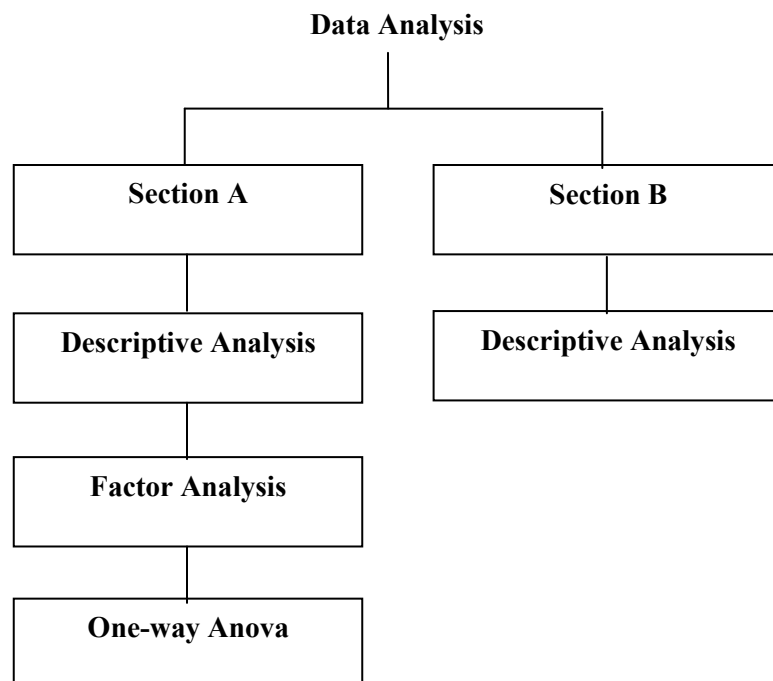


Figure 5.1 Data analysis conducted

### **5.2.1 Data Cleaning**

#### **Missing Data**

According to Hair et al.,(2010), missing data which make up below 10% for an individual case can generally be ignored except when the missing data occurs in a specific non-random fashion. The missing data in this sample was 4.2% (30 total cases) and they were found to be scattered randomly.

#### **Outliers**

From the data, each construct was checked for outliers. Since only a Likert scale of 1 to 5 was used, there were without any outliers. Therefore, all the cases were retained and considered sufficient for further statistical analysis.

### **5.2.2 Multivariate statistical assumptions**

#### **5.2.2.1 Normality and Linearity**

The normality of univariate data can be assessed, based on the standardised skewness and kurtosis of the variables lies between +1.96 and –1.96 at the .05 error level (Field, 2005; Hair, Black, Babin, & Anderson, 2010; Tabachnick & Fidell, 2007). In social science, by statistical convention, skewness and kurtosis both should fall in the range from +2.0 and -2.0 if the data are normally distributed (Chua, 2008; Lewis-Beck, Bryman, & Liao, 2004). The Skewness and Kurtosis for Cognitive Readiness did not fall into between +1.96 and –1.96 at the .05 error level as in Table 5.7 but virtually, the sample size of this study was large, which is  $n=710$ . Therefore, the graphical methods, histograms, normal probability plot and scatterplot were appropriate to be utilised as the

basic analyses for assessing the normality and linearity of the data (Crossley, 2008). Based on the Q-Q plot, it is ascertained that the data are normally distributed and further analysis can be done. At this point, refer to Appendix E in page 294 for details of the scatterplot and Q-Q plot.

Table 5.7 Overall mean of the constructs

( $n = 710$ )

Readiness	Mean	SD	Skewness	Kurtosis
Cognitive Readiness	4.30	0.47	-0.64	3.88
Functional Readiness	4.04	0.57	-0.43	1.51
Technical Readiness	3.61	0.60	-0.18	-.06

### 5.2.3 Factor Analysis for School Librarians' Readiness

A factor analysis was performed in order to group the 33 items into three groups. The KMO result was 0.950. If the KMO has a value of more than 0.70, then the factorability assumption has been satisfied or met and indicated that the sample is large enough to enable one to conduct a factor analysis (Field, 2005). The correlation matrix is as shown in Appendix F on page 299. The initial communalities' results show that all variables are fully 1.00 or 100% involved in the solution as in Appendix G on page 300. This means that all the variables had sufficient explanation. All the items were retained, and the researcher proceeded with the analysis. However, one item (Q19) was deleted as the factor loading which was below 0.5 in-group 3 (functional readiness). Table 5.8 showed the summary of the items and factor loading.

Table 5.8 Summary of items and factor loading from Principal Component Analysis  
with Varimax rotation

Rotated Component Matrix <sup>a</sup>		Component/ FA loading			
		Eigenvalues Variance %	1	2	3
Technical Readiness ( $\alpha = .952$ )		41.044			
Q36	Organize information from multiple sources.		.847		
Q35	Synthesize information found in the sources.		.842		
Q38	Judge the effectiveness of the information found to carry out the task.		.813		
Q34	Extract relevant information from information source.		.810		
Q37	Present the information found.		.801		
Q39	Judge the efficiency of the information process.		.779		
Q27	Identify information needed (to solve the information problem).		.771		
Q28	Determine all possible sources of information.		.761		
Q30	Locate sources intellectually and physically.		.760		
Q29	Select the best sources of information.		.758		
Q33	Find information within sources.		.757		
Q32	Search for information using the keyword search and alternative keyword search.		.748		
Q26	Define the information task (define the information needed).		.732		
Q31	Search for information using Booleans operators (AND, OR, NOT).		.639		

Table 5.8 Continued

Rotated Component Matrix <sup>a</sup>		Component/ FA loading		
		Eigenvalues Variance %	1	2
Cognitive Readiness ( $\alpha = .934$ )		15.340		
Q10	The information-literate person recognizes the need for information.			.800
Q11	The information-literate person formulates questions based on information needs.			.777
Q12	The information-literate person identifies potential sources of information.			.775
Q13	The information-literate person develops successful search strategies.			.761
Q9	The information-literate person recognizes accurately the information needed.			.747
Q15	The information-literate person organizes information for practical applications.			.734
Q16	The information-literate person integrates information found with existing knowledge.			.719
Q17	The information-literate person uses information in critical thinking.			.718
Q8	Information literacy enables the person to access, evaluate, and use information from a variety of sources.			.684
Q18	The information-literate person uses information in problem solving.			.682
Q14	The information-literate person accesses sources of information through computer-based and other technologies.			.664
Q7	Information literacy is a set of skills that can be learned.			.640
Q19	<i>A skilled school librarian with information literacy expertise has knowledge of resources</i>			.454
Functional Readiness ( $\alpha = .879$ )		5.196		
Q22	School librarians perform as information specialists.			.752
Q25	School librarians view their role as providing information.			.712
Q23	School librarians provide reference services in school libraries			.697
Q24	School librarians view their role as supporting teachers and students.			.691
Q20	School librarians train teachers during in-house training programmes to incorporate information literacy knowledge.			.672
Q21	School librarians play a leadership role in educating students on the importance of information literacy skills.			.643
Overall ( $\alpha = .951$ )				

### 5.2.4 Reliability Assessment

The overall reliability is Cronbach's Alpha of 0.961 that is above the acceptable value of 0.7 to 0.8. The details of the reliability are shown in Table 5.9. The overall alpha indicates excellent reliability as suggested by Field (2005) and Tabachnick & Fidell (2007).

Table 5.9 Reliability by constructs

(*n* =710)

Research Objectives	Operational	Items	Cronbach Alpha
1. School Librarians Readiness			
• Cognitive Readiness	IL concept	2 items	$\alpha = .934$
	Information literate attributes	10 items	
• Functional Readiness	School librarians' roles	6 items	$\alpha = .879$
• Technical Readiness	Self-assessed information literacy skills.	14 items	$\alpha = .952$

The items were retained based on the Cronbach's alpha values and inter-items correlation. Table 5.10 provides a summary of the alpha values and mean of the inter-item correlation. High alpha values indicate good internal consistency among items in each construct.

Table 5.10 Reliability analysis of the constructs

(*n* =710)

Research Objectives	Items	Range of item-total correlation	Cronbach's alpha	Mean of Inter-item correlation value
1. School Librarians Readiness				
Cognitive Readiness	12	.399-.725	0.934	0.544
Functional Readiness	6	.451-.715	0.879	0.563
Technical Readiness	14	.430-.824	0.952	0.611

Factor loading are used to establish the discriminant validity and convergent validity. As in table 5.10, each item load significantly ( $p < 0.01$  in all cases) on its underlying construct. All items loaded highly on their own factor ( $> .5$ ) with a difference of not more than .1 on other factors.

### **Cognitive Readiness**

The construct of the cognitive readiness has a total of 12 questions. The values ‘corrected item-total correlation’ are above 0.3 (ranging from 0.612 and 0.777) which indicates that the items have good internal consistency and are highly correlated (Field, 2005). The value ‘alpha if item deleted’ indicates that none of the items will increase in reliability if they are deleted because all values in the column are less than the overall 0.931. The internal reliability coefficient alpha is 0.934, which indicates that all items are positively contributing to the reliability as in Table 5.11. The alpha is also excellent because it is above 0.9 and so indicated excellent reliability (Field, 2005; Vogt, 2007).

Table 5.11 Reliability and Internal Consistency

( $n = 710$ )

Items	Cognitive Readiness	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q12	The information literate person identifies potential sources of information.	.777	.927
Q11	The information literate person formulates questions based on information needs.	.758	.927
Q13	The information literate person develops successful search strategies.	.754	.927
Q15	The information literate person organizes information for practical applications.	.745	.928
Q10	The information literate person recognizes the need for information.	.745	.928



Table 5.11 Continued

Items	Cognitive Readiness	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q17	The information literate person uses information in critical thinking.	.734	.928
Q16	The information literate person integrates information found with existing knowledge.	.732	.928
Q18	The information literate person uses information in problem solving.	.711	.929
Q9	The information literate person recognizes accurately the information needed.	.680	.930
Q14	The information literate person accesses sources of information through computer-based and other technologies.	.648	.931
Q8	IL enables you to access, evaluate, and use information from a variety of sources.	.636	.932
Q7	IL is a set of skills that can be learned.	.612	.932
Overall			$\alpha = .934$

### Functional Readiness

The construct of the school librarians' functional readiness comprises six items. The values '*corrected item-total correlation*' in this construct is above 0.3 (ranging from 0.616 and 0.725) which indicates that the items have good internal consistency and are highly correlated (Field, 2005). The value '*alpha if item deleted*' of item 20 is 0.874, which indicates that the reliability will increase if it is deleted because the value is more than the overall 0.879 reliability as in Table 5.12. However, the reliability alpha is 0.879 indicates good reliability without removing any items.

Table 5.12 Reliability and Internal Consistency

(n = 710)

Items	Functional Readiness	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q25	School librarians view their role as providing information.	.725	.852
Q23	School librarians provide reference services in school resource centre	.720	.854
Q22	School librarians perform as information specialists.	.712	.854
Q24	School librarians view their role as supporting teachers and students.	.730	.854
Q21	School librarians play a leadership role in educating students on the importance of IL skills.	.670	.860
Q20	School librarians train teachers during in-house training programs to incorporate IL knowledge.	.616	.874
Overall			$\alpha = .879$

### Technical Readiness

The construct of the school librarians' technical readiness comprises fourteen items. The values 'corrected item-total correlation' are above 0.3 (ranging from 0.614 and 0.833) which indicates that items have good internal consistency and highly correlated (Field, 2005). The value 'alpha if item deleted' of item 31 is 0.956 indicates that the reliability will increase if it is deleted because the value is more than the overall 0.952 reliability as in Table 5.13. However, the reliability alpha is 0.952, which indicates excellent reliability without removing any items.

Table 5.13 Reliability and Internal Consistency

(n = 710)

Items	Technical Readiness	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q36	Organize information from multiple sources.	.833	.947
Q35	Synthesize information found in the sources.	.826	.947
Q38	Judge the effectiveness of the information found to carry out the task.	.794	.948
Q37	Present the information found.	.789	.948
Q39	Judge the efficiency of the information process.	.777	.948
Q34	Extract relevant information from information source.	.785	.948
Q27	Identify information needed (to solve the information problem).	.774	.948
Q30	Locate sources intellectually and physically.	.766	.948
Q28	Determine all possible sources of information.	.754	.949
Q29	Select the best sources of information.	.748	.949
Q33	Find information within sources.	.732	.949
Q26	Define the information task (define the information needed).	.728	.949
Q32	Search for information using the keyword search and alternative keyword search.	.739	.949
Q31	Search for information using Booleans operators (AND, OR, NOT).	.614	.956
Overall			$\alpha = .952$

### 5.3 Findings

#### 5.3.1 School Librarians' Cognitive Readiness

Cognitive Readiness is described as school librarians' understanding and perception about IL as a concept and their ability to identify the attributes of an information literate person as shown in Appendix H, Table 1 in page 301. The 12 items (Q9-18) used a five Likert type scale ranging from "Strongly disagree" = 1, "Somewhat disagree" = 2, "Neutral" = 3, "Somewhat agree" = 4 to "Strongly agree" = 5.

Based on this five Likert type scale, the researcher used the mean score of each construct to interpret the readiness as in Table 5.14. The mean score ranging from 1.00 to 2.99 shows that school librarians are ‘Developing Readiness’. The mean score ranging from 3.00 to 3.99 indicates that school librarians are ‘Approaching Readiness’. The mean score ranging 4.00 to 5.00 shows that they are ‘Ready’ for the IL implementation in cognitive and functional readiness.

Table 5.14 School Librarians’ Readiness Scale for cognitive readiness

Likert Scale			Readiness	
1.	Strongly agree	5.00	<b>Ready</b>	The SL consistently demonstrates an understanding of IL concept and the attributes of an information literate person
2.	Agree	4.00-4.99		
3.	Neutral	3.00-3.99	<b>Approaching Readiness</b>	The SL inconsistently demonstrates an understanding of IL concept and the attributes of an information literate person
4.	Disagree	2.00-2.99	<b>Developing Readiness</b>	The SL does not demonstrate an understanding of IL concept and the attributes of an information literate person
5.	Strongly Disagree	1.00-1.99		

The mean score of these school librarians’ cognitive readiness is Mean =4.30, SD=0.48 as in Table 5.17. The degree of agreement indicates that the SL consistently demonstrates an understanding of IL concept and the attributes of an information literate person. As such they are considered ‘Ready’ in terms of Cognitive Readiness (Table 5.14).

The results contradict with the much of the literature which claims that school librarians are unsure and confused about IL concept and unsure what IL or IL skills are. Previous studies also show that school librarians often confuse IL with information

communication technology (ICT) (Diao & Chandrawati, 2005; Education Technology Division, 2005; 2009; Norhayati, Nor Azilah, & Mona, 2006). Likewise, in literature, teachers relate IL with reading or ICT which actually includes both literacy and ICT (Probert, 2009). Therefore, the results in this study show that school librarians understand what IL is and this differs from Norhayati's (2009) findings.

### **5.3.2 School librarians' Functional Readiness**

Functional Readiness is described as school librarians' understanding and ability to carry out their tasks based on their role as educators. It is measured based on how school librarians perceive their roles as IL educators. The school librarians' functional readiness comprises six items (Q20-25) whereby school librarian perceived their role of IL educators as shown in Appendix H, Table 2 in page 301. The school librarians' functional readiness is measured using a five-Likert scale ranging from "strongly disagree" = 1, "somewhat disagree" = 2, "neutral" = 3, "somewhat agree" = 4 to "strongly agree" = 5.

Based on this five Likert type scale, the researcher used the mean score of each construct to interpret the readiness as in Table 5.15. The mean score ranging from 1.00 to 2.99 shows that school librarians are 'Developing Readiness'. The mean score ranging from 3.00 to 3.99 indicates that school librarians are 'Approaching Readiness'. The mean score ranging 4.00 to 5.00 shows that they are 'Ready' for the IL implementation in cognitive and functional readiness.

Table 5.15 School Librarians' Readiness Scale for functional readiness

Likert Scale			Readiness	
1.	Strongly agree	5.00	<b>Ready</b>	The SL consistently demonstrates an understanding their tasks and abilities based on their role as IL educators
2.	Agree	4.00-4.99		
3.	Neutral	3.00-3.99	<b>Approaching Readiness</b>	The SL inconsistently demonstrates an understanding their tasks and abilities based on their role as IL educators
4.	Disagree	2.00-2.99	<b>Developing Readiness</b>	The SL does not demonstrate an understanding of their tasks and abilities based on their role as IL educators
5.	Strongly Disagree	1.00-1.99		

The mean score of school librarians' functional readiness is Mean =4.05, SD =0.57 as in Table 5.17. The degree of agreement indicates that the school librarians consistently demonstrates an understanding an understanding their tasks and abilities based on their role as IL educators. As such, generally they are considered 'Ready' in terms of Functional Readiness (Table 5.15).

The results showed similarity to literature as most teachers regard school librarians' functional ready as their role as resource managers (Hockersmith, 2010). However, their roles are interrelated as teachers, collaborators, curriculum leaders, instructional leaders, information specialists, instructional technologist, programme managers and advocates. They are also the link to student learning to the greatest possible extent (Church, 2008; Gbaje, 2008; Novo & Calixto, 2009; Reed, 2009).

A review of school librarians' literature revealed that the school librarians as IL educators might differ locally. Thus, the preparation, experience, and qualifications of

school librarians are also different from the professional librarians who acquired through mainstream information professional programme. So, their position as professional school librarians remains is unclear as they are teachers managing school libraries (Raja Abdullah & Saidina, 2003).

There is also some research about school librarians' experience or their views in relation to their roles and responsibilities (Abrizah, 1999). Therefore, we need a clear understanding of their experience in this matter in order to plan school librarians' preparation programmes. This will be addresses in Section 5.3.2

### **5.3.3 School librarians' Technical Readiness**

Technical Readiness is described as having IL skills required for IL education. It is measured based on school librarians' self-assessed IL skills.

The school librarians' technical readiness comprises fourteen (Q26-39) items as in Appendix H, Table 3 in page 302 where school librarians self-assessed their IL skills by using a five-Likert scale ranging from "Do not know at all" = 1, "poor" = 2, "average" = 3, "good" = 4 or "excellent" = 5. These questions are designed based on the Big Six IL skills using two additional questions on online searching skills.

Based on this five Likert type scale, the researcher used the mean score of each construct to interpret the readiness as in Table 5.16. The mean score ranging from 1.00 to 2.99 shows that school librarians are 'Developing Readiness'. The mean score ranging from 3.00 to 3.99 indicates that school librarians are 'Approaching Readiness.

The mean score ranging 4.00 to 5.00 shows that they are ‘Ready’ for the technical readiness.

Table 5.16 School Librarians’ Readiness Scale for technical readiness

Likert Scale			Readiness	
1.	Excellent	5.00	<b>Ready</b>	The SL consistently demonstrates a high level of self-assessed IL skills required for IL education
2.	Good	4.00-4.99		
3.	Average	3.00-3.99	<b>Approaching Readiness</b>	The SL demonstrates an average of self-assessed IL skills required for IL education
4.	Poor	2.00-2.99	<b>Developing Readiness</b>	The SL demonstrate a low level of self-assessed IL skills required for IL education
5.	Do not know at all	1.00-1.99		

The mean score of school librarians’ technical readiness is 3.61, SD=0.60 as in Table 5.17. Based on the School Librarians’ Readiness Scale, they are ‘Approaching Readiness’ in their technical readiness. This indicates that school librarians demonstrate an average of self-assessed IL skills required for IL education

The literature showed that school librarians with technical readiness or IL skills can provide better services and perform their task in the school libraries (Combes, 2008) if they acquire and comprehend the IL skills as well as gain knowledge in order to assist, provide and teach IL in schools (Morizio & Henri, 2003). Therefore, they, if equipped with the IL skills and competencies, would contribute to the new learning paradigm (Sit, 2003).



## Summary

The school librarians' readiness is measured by the mean score of each construct as in Table 5.17.

Table 5.17 School Librarians Readiness

School Librarians Readiness		Mean	SD	Readiness
1.	Cognitive Readiness	4.30	0.48	Ready
2.	Functional Readiness	4.05	0.57	Ready
3.	Technical Readiness	3.61	0.60	Approaching Readiness

The highest mean score of school librarians' readiness is Cognitive Readiness with the mean score of 4.30, SD =0.48 followed by Functional Readiness with then mean score of 4.05, SD=0.57. This indicates that they are only 'Ready' in their cognitive readiness and functional readiness. The Technical Readiness mean score is 3.61, SD=0.60. This indicates that they are 'Approaching readiness' in their technical readiness. Their readiness in all three is crucial for IL implementation.

### 5.3.4 Experience and Qualifications influence school librarians' readiness

#### 5.3.4.1 Is there a statistical significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience?

Table 5.18 displayed the mean of cognitive readiness across the three levels of school librarians' experience?

Table 5.18 Mean of Cognitive Readiness  
( $n = 710$ )

Cognitive Readiness	N	Mean	Std. Deviation
a. 0 - 5 years	513	4.28	0.46
b. 6 - 10 years	139	4.31	0.54
c. 11-30 years	58	4.40	0.47

A one-way between subjects ANOVA is conducted to compare the statistical significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience. There is no statistically significant mean difference in the school librarians' cognitive readiness,  $F(2, 707) = 1.46$ ,  $p > 0.05$  between the level 0 - 5 years ( $M = 4.28$ ,  $SD = 0.46$ ), 6 - 10 years ( $M = 4.31$ ,  $SD = 0.54$ ) and 11-30 years ( $M = 4.40$ ,  $SD = 0.47$ ) as in Table 5.18 and Table 5.19.

Table 5.19 ANOVA summary of School librarians' Cognitive Readiness  
( $n = 710$ )

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.659	2	.329	1.459	.233
Within Groups	159.609	707	.226		
Total	160.268	709			

The results suggest that there is no statistically significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience. This means that the school librarians' cognitive readiness bears no difference in term of school librarians' experience.

**5.3.4.2. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the four levels of school librarians' professional qualifications?**

Table 5.20 showed the mean difference of cognitive readiness across the four levels of school librarians' professional qualifications.

Table 5.20 Mean of Cognitive Readiness  
( $n = 710$ )

Cognitive Readiness	N	Mean	Std. Deviation
None	259	4.28	0.45
In-service SRCM courses of less than one semester	351	4.29	0.49
In-service SRCM courses of one semester or more	59	4.28	0.53
Tertiary level in LIS	41	4.51	0.40

A one-way between subjects ANOVA is conducted to compare the statistical significant mean difference in the school librarians' cognitive readiness across the four levels of school librarians' professional qualifications. There is a statistically significant mean difference in the school librarians' cognitive readiness,  $F(3, 706) = 2.84, p < 0.05$  between the four levels of None ( $M = 4.28, SD = 0.45$ ), In-service SRCM courses less than one semester ( $M = 4.29, SD = 0.49$ ), In-service SRCM courses one semester or more ( $M = 4.28, SD = 0.53$ ) and Tertiary level in LIS ( $M = 4.51, SD = 0.40$ ) as in Table 5.20 and Table 5.21.

Table 5.21 ANOVA summary of School librarians' Cognitive Readiness  
( $n = 710$ )

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.908	3	.636	2.836	.037
Within Groups	158.360	706	.224		
Total	160.268	709			

Post-hoc comparisons using the Tukey HSD test indicate that the mean score for the Tertiary level in LIS professional qualifications group ( $M = 4.51$ ,  $SD = 0.40$ ) has statistical significant difference with the 'None' professional qualifications group ( $M = 4.28$ ,  $SD = 0.45$ ,  $p=0.022$ ) and 'In-service SRCM courses of less than one semester' level ( $M = 4.29$ ,  $SD = 0.49$ ,  $p=0.033$ ). The Tertiary level in LIS professional qualifications group ( $M = 4.51$ ,  $SD = 0.40$ ) does not have statistical significant difference with 'In-service SRCM courses of one semester or more' level ( $M = 4.28$ ,  $SD = 0.53$ ,  $p=0.085$ ) as in Table 5.22.

Table 5.22 Tukey HSD Post Hoc Multiple Comparisons Test: Cognitive Readiness by  
Level of Professional Qualifications

(I) Professional Qualifications	(J) Professional Qualifications	Mean Difference (I-J)	Std. Error	Sig.
Tertiary level in LIS	None	.22778*	0.0796	0.022
	In-service SRCM courses of less than one semester	.21336*	0.07817	0.033
	In-service SRCM courses of one semester or more	0.22785	0.09629	0.085

The results suggest that there is a statistically significant difference between the school librarians' cognitive readiness across the four levels of school librarians'

professional qualifications. This means that the school librarians' cognitive readiness has statistically significant difference in terms of professional qualifications.

It is found that there is a statistically significant difference between 'Tertiary level in LIS' group and 'None' and 'In-service SRCM courses of less than one semester'. There is no statistical significant difference between 'Tertiary level in LIS' group and 'In-service SRCM courses of one semester or more'. This means the school librarians with higher professional qualifications have better cognitive readiness.

#### **5.3.4.3. Is there a statistically significant mean difference in school librarians' functional readiness across the three levels of school librarians' experience?**

Table 5.23 showed the mean of Functional Readiness across the three levels of school librarians' experience.

Table 5.23 Mean of functional readiness  
( $n = 710$ )

Functional Readiness	N	Mean	Std. Deviation
0 - 5 years	513	4.00	0.56
6 - 10 years	139	4.11	0.59
11-30 years	58	4.16	0.57

A one-way between subjects ANOVA is conducted to compare the statistical significant mean difference in the school librarians' functional readiness across the three levels of school librarians' experience. There is no statistically significant mean difference in the school librarians' functional readiness,  $F(2, 707) = 2.798$ ,  $p > 0.05$

between the level 0 - 5 years (M= 4.00, SD= 0.56), 6 – 10 years (M= 4.11, SD= 0.59) and 11-30 years (M= 4.16, SD= 0.57) as in Table 5.23 and Table 5.24.

Table 5.24 ANOVA summary of School librarians' Functional Readiness  
(*n* = 710)

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.801	2	.901	2.798	.062
Within Groups	227.547	707	.322		
Total	229.348	709			

The results suggest that there is no statistically significant mean difference in the school librarians' functional readiness across the three levels of school librarians' experience. This means that the school librarians' functional readiness has no difference in term of school librarians' experience.

#### **5.3.4.4. Is there a statistical significant mean difference in the school librarians' functional readiness across the four levels of school librarians' professional qualifications?**

Table 5.25 showed the mean of Functional Readiness across the four levels of school librarians' professional qualifications.

Table 5.25 Mean of functional readiness  
(*n* = 710)

Functional Readiness	N	Mean	Std. Deviation
None	259	3.96	0.58
In-service SRCM courses less than one semester	351	4.05	0.55
In-service SRCM courses one semester or more	59	4.13	0.59
Tertiary level in LIS	41	4.38	0.49

A one-way between subjects ANOVA is conducted to compare the statistically significant mean difference in the school librarians' functional readiness across the four levels of school librarians' professional qualifications. There is statistically significant mean difference in the school librarians' functional readiness,  $F(3, 706) = 7.106$ ,  $p < 0.05$  between the four levels namely, None ( $M = 3.96$ ,  $SD = 0.58$ ), In-service SRCM courses less than one semester ( $M = 4.05$ ,  $SD = 0.55$ ), In-service SRCM courses of one semester or more ( $M = 4.13$ ,  $SD = 0.59$ ) and Tertiary level in LIS ( $M = 4.38$ ,  $SD = 0.49$ ) as in Table 5.25 and Table 5.26.

Table 5.26 ANOVA summary of school librarians' functional readiness  
( $n = 710$ )

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.722	3	2.241	7.106	.000
Within Groups	222.626	706	.315		
Total	229.348	709			

Post-hoc comparisons using the Tukey HSD test indicate that the mean score between the Tertiary level in LIS professional qualifications level ( $M = 4.38$ ,  $SD = 0.49$ ) has a statistically significant mean difference with the 'None' professional qualifications level ( $M = 3.96$ ,  $SD = 0.58$ ,  $p = .000$ ) and the 'In-service SRCM courses less than one semester' ( $M = 4.05$ ,  $SD = 0.55$ ,  $p = 0.003$ ). The Tertiary level in LIS level ( $M = 4.38$ ,  $SD = 0.49$ ) does not have statistically significant mean difference with the 'In-service SRCM courses of one semester or more' ( $M = 4.13$ ,  $SD = 0.59$ ,  $p = 0.132$ ) as in Table 5.27.

Table 5.27 Tukey HSD Post Hoc Multiple Comparisons Test: Functional Readiness by Level of Professional Qualifications

(I) Professional Qualifications	(J) Professional Qualifications	Mean Difference (I-J)	Std. Error	Sig.
Tertiary level in LIS	None	.41473*	.09439	.000
	In-service SRCM courses of less than one semester	.32534*	.09268	.003
	In-service SRCM courses of one semester or more	.24811	.11417	.132

The results suggest that there is statistically significant mean difference in the school librarians' functional readiness across the four levels of school librarians' professional qualifications. This means that the school librarians' functional readiness have statistical significant mean difference across the four levels of school librarians professional qualifications.

It is found that there is a statistically significant mean difference between 'Tertiary level in LIS' group and 'None' and 'In-service SRCM courses of less than one semester'. There is no statistically significant mean difference between 'Tertiary level in LIS' group and 'In-service SRCM courses of one semester or more'. This means that school librarians with higher level of professional qualifications are higher in their functional readiness.

The finding indicated that higher level of professional qualification among school librarians influence the functional readiness. Thus, the school librarians are ready with their functional readiness provided that they are with higher professional qualifications. This is supported by school librarians' literature that revealed qualified school librarians



trained in Library and Information Science (LIS) are able to apply their proficiencies in pedagogy and library science in their teaching and integrating IL within the curriculum.

Branch & De Groot (2009) also emphasized that school librarians who are armed with a Master of Education degree are not capable to keep up with the changing demands of the job. They may need to model lifelong learning and try to seek out personal professional development that complements and expands on their graduate education in future.

According to Turner, Matthews, Ashcroft, & Farrow (2007), qualifications and experience of school managers vary widely throughout independent school libraries. The qualifications, skills and experience of school library managers have significant bearing on how they perceive the management of school libraries in general. In particular, attitudes about the most appropriate qualifications and experience needed to manage an independent school library are polarized according to respondents' current qualifications and experience. Therefore, professional qualification is an important element to prepare and built the functional readiness among school librarians.

#### **5.3.4.5. Is there a statistically significant mean difference in school librarian's technical readiness across the three levels of school librarian experience?**

Table 5.28 showed the mean of Technical Readiness across the three levels of school librarian experience.

Table 5.28 Mean of Technical Readiness  
( $n = 710$ )

Technical Readiness	N	Mean	Std. Deviation
a. 0 - 5 years	513	3.56	0.59
b. 6 - 10 years	139	3.70	0.58
c. 11-30 years	58	3.85	0.63

A one-way between subjects ANOVA is conducted to compare the statistically significant mean difference in school librarian's technical readiness across the three levels of school librarian experience. There is a statistically significant mean difference in school librarian's technical readiness,  $F(2, 707) = 8.14$ ,  $p < 0.05$  between the three levels 0 - 5 years ( $M = 3.56$ ,  $SD = 0.59$ ), 6 – 10 years ( $M = 3.70$ ,  $SD = 0.58$ ) and 11-30 years ( $M = 3.85$ ,  $SD = 0.63$ ) as in Table 5.28 and Table 5.29.

Table 5.29 ANOVA summary of School librarians' Technical Readiness  
( $n = 710$ )

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.710	2	2.855	8.136	.000
Within Groups	248.087	707	.351		
Total	253.798	709			

Post-hoc comparisons using the Tukey HSD test indicate that the mean score for the 0-5 years of experience group ( $M = 3.56$ ,  $SD = 0.59$ ) has no statistically significant mean difference with the 6-10 years group ( $M = 3.70$ ,  $SD = 0.58$ ,  $p = 0.38$ ). The 0-5 years of experience group ( $M = 3.56$ ,  $SD = 0.59$ ) is statistically significant in mean difference with the 11-30 years group ( $M = 3.85$ ,  $SD = 0.63$ ,  $p = 0.001$ ) as in Table 5.30.

Table 5.30 Tukey HSD Post Hoc Multiple Comparisons Test: Technical Readiness by Level of School Librarians' Experience

(I)School librarians' experiences	(J)School librarians' experiences	Mean Difference (I-J)	Std. Error	Sig.
11-30 years	0 - 5 years	.28935*	.08206	.001
	11-30 years	.15017	.09260	.237

The results suggest that there is a statistically significant mean difference in school librarian's technical readiness across the three levels of school librarian experience. This means that school librarians' technical readiness have differences across the three levels of school librarian experience.

It is found that there is no statistically significant mean difference between the school librarian's technical readiness across the levels 0 - 5 years and 6 - 10 years. However, there is a statistically significant mean difference between the school librarian's technical readiness across the levels 0 - 5 years and 11-30 years. This means the higher level of school librarians' experience; the more ready they are in their technical readiness.

The findings indicated that teachers who have worked longer as school librarians are more ready in their technical readiness. Therefore, using the ideas of Kolb's experiential learning theory, describes learning as "the process whereby knowledge is created through the transformation of experience" (Illeris, 2009). They transform their experience into knowledge. This confirmed that experiences are fundamental. School librarians use their experience and what they know in technical to relate and use them.

This prepared them to be technical ready. This showed in the literature where Moore (2002) claimed that school librarians who had attended professional development for in-service teachers more often used their personal experience in learning through IL and ICT and collaborative instructional design in their teaching and evaluation of student outcomes.

#### **5.3.4.6 Is there a statistically significant mean difference in the school librarians' technical readiness across the four levels of school librarians' professional qualifications?**

Table 5.31 showed the mean of Technical Readiness across the four levels of school librarians' professional qualifications.

Table 5.31 Mean of Technical Readiness  
( $n = 710$ )

Technical Readiness	N	Mean	Std. Deviation
a. None	259	3.46	0.62
b. In-service SRCM courses less than one semester	351	3.63	0.56
c. In-service SRCM courses one semester or more	59	3.80	0.51
d. Tertiary level in LIS	41	4.07	0.61

A one-way between subjects ANOVA is conducted to compare the statistically significant mean difference in the school librarians' technical readiness across the four levels of school librarians' professional qualifications. There is a statistically significant mean difference in the school librarians' technical readiness across the four levels of school librarians professional qualifications, at the  $p < .05$  level for the four levels [ $F(3,$

706) = 16.22,  $p = 0.000$ ], None ( $M = 3.46$ ,  $SD = 0.62$ ), In-service SRCM courses of less than one semester ( $M = 3.63$ ,  $SD = 0.56$ ), In-service SRCM courses of one semester or more ( $M = 3.80$ ,  $SD = 0.51$ ) and Tertiary level in LIS ( $M = 4.07$ ,  $SD = 0.61$ ) as in Table 5.31 and Table 5.32.

Table 5.32 ANOVA summary of School librarians' Technical Readiness ( $n = 710$ )

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.361	3	5.454	16.216	0
Within Groups	237.437	706	0.336		
Total	253.798	709			

Post-hoc comparisons using the Tukey HSD test indicate that the mean score for the Tertiary level in LIS professional qualifications ( $M = 4.07$ ,  $SD = 0.61$ ) has significant difference from the 'None' professional qualifications ( $M = 3.46$ ,  $SD = 0.62$ ,  $p = 0.000$ ), 'In-service SRCM courses of less than one semester' ( $M = 3.63$ ,  $SD = 0.56$ ,  $p = 0.000$ ). Tertiary level in LIS level ( $M = 4.07$ ,  $SD = 0.61$ ) does not have significant difference from the 'In-service SRCM courses of one semester or more' ( $M = 4.07$ ,  $SD = 0.61$ ,  $p = 0.095$ ) as in Table 5.33.

Table 5.33 Tukey HSD Post Hoc Multiple Comparisons Test: Technical Readiness by Level of Professional Qualifications

(I) Professional Qualifications	(J) Professional Qualifications	Mean Difference (I-J)	Std. Error	Sig.
Tertiary level in LIS	None	.60499*	.09747	.000
	In-service SRCM courses less than one semester	.43741*	.09571	.000
	In-service SRCM courses one semester or more	.27308	.11791	.095

The results suggest that there is a statistically significant mean difference in the school librarians' technical readiness across the four levels of school librarians' professional qualifications.

It is found that there is a statistically significant mean difference between 'Tertiary level in LIS' level and 'None' and 'In-service SRCM courses of less than one semester'. There is no statistically significant mean difference different between 'Tertiary level in LIS' level and 'In-service SRCM courses of one semester or more'. This means that school librarians have higher technical readiness when they have a higher level of professional qualifications.

### **Summary of research hypothesis**

The findings for research question 3 as in Table 5.34 indicate that school librarians' professional qualifications will substantiate the Cognitive, Functional and Technical Readiness. The school librarians' experience is not required for the Cognitive and Functional Readiness but is needed for Technical Readiness. Thus, the professional qualifications and experience are essential to the School Librarians' Readiness.

Table 5.34 Summary of research hypothesis

<b>RQ 3: How does experience and qualifications influence school librarians' readiness?</b>		
Research Questions	Data Analysis	Results
i. Is there a statistically significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience?	Anova	Not significant
ii. Is there a statistically significant mean difference in the school librarians' cognitive readiness across the four levels of school librarians' professional qualifications?	Anova	Significant
iii. Is there a statistically significant mean difference in school librarians' functional readiness across the three levels of school librarians' experience?	Anova	Not significant
iv. Is there a statistically significant mean difference in the school librarians' functional readiness across the four levels of school librarians' professional qualifications?	Anova	Significant
v. Is there a statistically significant mean difference in school librarians' technical readiness across the three levels of school librarians' experience?	Anova	Significant
vi. Is there a statistically significant mean difference in the school librarians' technical readiness across the four levels of school librarians' professional qualifications?	Anova	Significant

### 5.3.5 The organizational factors influencing the implementation of IL

The researcher used four factors derived from the interviews for the organizational factors influencing ILE implementation. The factors were the IL Policies and standards, Teaching and learning strategies, Professional development and infrastructure. The organizational factor consisted of 22 items (Q40-61). The respondents indicated the level of importance based on a five-Likert scale ranging from “Not important at all” = 1, “Somewhat not important” = 2, “No opinion either way” = 3, “Somewhat important” = 4 or “Extremely important” = 5.

### 5.3.5.2 Factor 1: Information Literacy Policies and standards

Table 5.35 showed the first factor consists of nine items. It is apparent from this table that the majority of respondents felt that IL Policies and standards were somewhat important to school librarians. Less than 10% of the respondents felt that the issues were somewhat not important and not important at all.

Table 5.35 Information Literacy Policies and standards

	Items	Not important at all	Somewhat not important	No opinion either way	Somewhat important	Extremely important
Q51	An IL education policy for school librarians	3 (0.4%)	11 (1.5%)	100 (14.1%)	400 (56.3%)	196 (27.6%)
Q52	An IL education guideline for school librarians	1 (0.1%)	6 (0.8%)	62 (8.7%)	408 (57.5%)	233 (32.8%)
Q53	A National IL standard	3 (0.4%)	13 (1.8%)	109 (15.4%)	393 (55.4%)	192 (27%)
Q54	IL standards for students	2 (0.3%)	20 (2.8%)	109 (15.4%)	392 (55.2%)	187 (26.3%)
Q55	LIS certification for school librarians	6 (0.8%)	19 (2.7%)	69 (9.7%)	350 (49.3%)	266 (37.5%)
Q56	School librarians attend IL training.	1 (0.1%)	1 (0.1%)	25 (3.5%)	364 (51.3%)	319 (44.9%)
Q57	A standardized IL training curriculum for school librarians	0 (0%)	7 (10%)	50 (7.0%)	358 (50.4%)	295 (41.5%)
Q58	Standardized IL training modules for school librarians	0 (0%)	4 (0.6%)	37 (5.2%)	366 (51.5%)	302 (42.7%)
Q59	Continuing education opportunities in LIS for school librarians	3 (0.4%)	14 (2.0%)	59 (8.3%)	333 (46.9%)	301 (42.4%)

Over half of those surveyed reported that IL education policy for school librarians were somewhat important (56.3%) and only 27.6% of the respondents felt that IL education policy for school librarians is extremely important. 57.5% of the respondents



felt that an IL education guideline for school librarians were somewhat important and 32.8% felt that it is extremely important. 55.4% of respondents felt that a national IL standard is somewhat important and 27% felt that it is extremely important. The respondents felt the same about IL standards for students with 55.2% felt that it is somewhat important and another 26.3% felt that it is extremely important.

However, the respondents felt that it is somewhat important (51.3%) and extremely important (44.9%) for school librarians attend IL training. They also felt that it is somewhat important (50.4%) and extremely important (41.5%) to have a standardized IL training curriculum for school librarians. They felt that somewhat important (51.5%) and extremely important (42.7%) to have standardized IL training modules for school librarians. The percentages of respondents decreased where only 49.3% felt that it is somewhat important to have LIS certification for school librarians and another 37.5% felt that it is extremely important.

Therefore, the preparations of school librarians to be IL educators require advancement of their professionalism in LIS. They also require appropriate LIS certification as the pre-condition to be qualified school librarians. The LIS learning opportunities provided in pre-service and post-service for school librarians can facilitate the development and acquirement of the necessary IL knowledge and skills. Further continuing education opportunities in LIS can provide them with opportunities to pursue lifelong learning.

In order to achieve successful ILE implementation, appropriate ILE policy and guidelines are required. These include ILE implementation planning for students as they are the receivers of ILE in schools. This includes the IL standard for students. The researcher refers to this theme as Preparation of ILE Implementation.

Here, the respondents also agree that the IL training programmes are essential within the school librarians' training and school libraries' programmes which require the awareness, commitments and support from the senior MoE officials as well as various divisions that deal with school librarians' training and school libraries' activities. As in the literature, it needs sufficient preparations, guidelines, strategies and facilities to integrate IL into regular teaching programmes (Singh et al, 2006).

Thus, the results indicate that the preparation of ILE implementation indeed needs to have standardized IL training curriculum for school librarians, standardized training modules and school librarians are required to attend IL training. It is recommended that a division to have qualified LIS professional be set up to be in charge and be responsible to train school librarians and manage school libraries. This may be a proper way to prepare them to be ready as information professionals. This division may need to draw up standardized training modules, curriculum and training for all school librarians to create a group of school librarians with credentials.

From the literature, the MoE does not offer any training continuity in LIS education at diplomas or degree levels. The MoE may need to recognise there is a need to have trained and qualified school librarians in LIS. Therefore, as in the literature,

there is a need for collaboration between MoE and MoHE to train qualified school librarians at diplomas or degree levels by LIS schools at tertiary education institutions.

As appeared in the literature, the certification and accreditation of school librarians have a need to be recognised by librarian associations. School librarianship is a profession which needs a good general education, broad and technical training in the educational and teaching process and a minimum of training in library economy. The school librarian profession is highly regarded in education development. School librarians are required to have appropriate first professional degree either a master's degree from a programme accredited by ALA or a master's degree with a specialty in school librarianship from a programme recognized by AASL in an educational unit accredited by National Council for Accreditation of Teacher Education (NCATE) (American Association of School Librarians, 2011).

As in the result, the school librarians' certification appeared to be an important factor loading. Thus, local school librarians may need some credentials or accreditation recognition for their LIS qualifications from MoE and Malaysian Qualifications Agency so that school librarians will be looked upon as a highly regarded profession with credentials in the education development. Therefore, MoE needs to plan appropriate LIS programme and training accredited by recognised school librarianship association or professional bodies.

As from the literature, there seemed to be an absence of any IL guidelines, policies or standards documentation in the developmental of ILE (Edzan & Mohd

Sharif, 2005a) in the Malaysian educational context. However, the results show that these three guidelines, policies and standards are essential and important for the preparation of ILE implementations in schools.

What ETD do have is the Standard and Guidelines for the SRCs in Malaysia which provides guiding principles to schools to fulfil the educational services with the development of ICT (Fatimah, 2002), excluding IL standard and guidelines for the school librarians or students. Therefore, we need some kind of national IL standard with the relevant performance indicators and learning outcomes (Edzan & Mohd Sharif, 2005a) in the Malaysian education context.

Implementation of ILE may need a concrete foundation based on ILE guidelines, policies or standards. Further research is required as many local ILE studies used Big Six model to examine the extent of relevance of applying foreign IL models to achieve the IL standards in local education environment. We may need to know whether these IL models and standards need any modifications to suit the Malaysian education curriculum.

There are views in the literature that MoE may need a standardized IL framework at the national, higher learning institutions and school levels, which consist of principles, standards and practices that will support ILE in all sectors. Therefore, there is a need to formulate and establish a national IL agenda or NILA with the collaboration of all stakeholders at all levels (Edzan, 2008; Edzan & Mohd Sharif, 2005b).

### 5.3.5.3 Factor 2 Teaching and Learning Strategies

Table 5.36 showed the second factors, Teaching and Learning Strategies which comprised of six items. The overall responses to this section were very positive. 55.1% of the respondents felt that IL should be integrate into curriculum within subjects and 31.1% of them found that it is extremely important. The respondents share the same opinion about integrates IL into the Information and Communication Technology Literacy (ICTL) subject with 55.1% and another 27.0% agreed that it is extremely important.

Table 5.36 Teaching and Learning Strategies

	Items	Not important at all	Somewhat not important	No opinion either way	Somewhat important	Extremely important
Q45	Integrate IL into curriculum within subjects	3 (0.4%)	12 (1.7%)	83 (11.7%)	391 (55.1%)	221 (31.1%)
Q46	Teach IL as a separate subject within the school curriculum	6 (0.8%)	46 (6.5%)	159 (22.4%)	344 (48.5%)	155 (21.8%)
Q47	Teach IL as a set of library-based skills	10 (1.4%)	37 (5.2%)	129 (18.2%)	377 (53.1%)	157 (22.1%)
Q48	Teach IL in the school resource centre	10 (1.4%)	37 (5.2%)	129 (18.2%)	337 (53.1%)	157 (22.1%)
Q49	Integrate IL into the Information and Communication Technology Literacy (ICTL) subject	6 (0.8%)	14 (2.0%)	107 (15.1%)	391 (55.1%)	192 (27.0%)
Q50	A national IL agenda	5 (0.7%)	10 (1.4%)	145 (20.4%)	381 (53.7%)	169 (23.8%)

However, there is a slightly lower percentage, the respondents felt that it is somewhat important (53.7%) to have a national IL agenda and 23.8% agreed that it is extremely important. The respondents (53.1%) also felt it is somewhat important to teach IL in the school resource centre and 22.1% felt that it is extremely important. Respondents felt the same about teaching IL as a set of library-based skills.

A minority of respondents (48.5%) indicated it is somewhat important to teach IL as a separate subject within the school curriculum and another 21.8% felt that it is extremely important.

The items suggest several approaches to teach IL in schools. IL may be taught as a set of library-based skills in SRC or it is as a separate subject within the school curriculum. It may be integrated into curriculum within subjects. On the other hand, there is a suggestion of integrating IL into the Information and Communication Technology Literacy (ICTL) subject.

Lastly, all these suggestions to implement ILE in schools may require definite collaboration and teamwork from MoE divisions especially EPRD, ETD, TED and ITEM to design ILE framework as the outline of the implementation in schools. It may be more successful if there is an outline of a national IL agenda in the education policy itself.

As from the literature, ILE is isolated from mainstream academicians' environments although researchers including Abdullah (2008) and Edzan (2008) affirm that IL can be

embedded within the Malaysian Educational system. Therefore, the MoE may need to look into plans, strategies and approaches to the implementation of ILE in schools.

The MoE may need to choose which approach is suitable to implement ILE into the education curriculum. The MoE may look into teaching IL as a set of library-based skills, teaching of IL in the school resource centre and teaching of IL as a separate subject within the school curriculum.

It is possible to integrate IL into the Information and Communication Technology Literacy (ICTL) subject or integrate IL into the curriculum within subjects in the curriculum. There would be more transparency if a national IL agenda were being planned and realised in our national education policy.

#### **5.3.5.3 Factor 3: Professional Development**

Table 5.37 below illustrated factor 3, Professional Development which comprised of 5 items. The majority of respondents felt that it is extremely important (53.7%) and somewhat important (42.0%) for school librarians attend IL professional development. The respondents also felt that it is extremely important (53.5%) and somewhat important (42.4%) for school librarians to attend IL courses. The majority of those who responded felt that it is extremely important (48.9%) and somewhat important (45.4%) for school librarians to learn IL instruction (pedagogy) on how to teach students

Table 5.37 Professional Development

	<b>Items</b>	Not important at all	Somewhat not important	No opinion either way	Somewhat important	Extremely important
Q40	School librarians attend IL courses	0 (0%)	1 (0.1%)	28 (3.9%)	301 (42.4%)	380 (53.5%)
Q41	School librarians attend IL professional development	0 (0%)	2 (0.3%)	29 (4.1%)	298 (42.0%)	381 (53.7%)
Q42	School librarians learn IL instruction (pedagogy) on how to teach students	0 (0%)	9 (1.3%)	32 (4.5%)	322 (45.4%)	347 (48.9%)
Q43	School librarians collaborate with subject teachers to plan and teach IL in classroom	0 (0%)	14 (2.0%)	53 (7.5%)	330 (46.5%)	313 (44.1%)
Q44	Implement IL in the education curriculum	1 (0.1%)	8 (1.1%)	74 (10.4%)	354 (49.7%)	274 (38.6%)

Further analysis showed that respondents felt that it is somewhat important (46.5%) and extremely important (44.1%) for school librarians collaborate with subject teachers to plan and teach IL in classroom. Fewer respondents felt that it is extremely important (38.6%) and somewhat important (49.7%) to implement IL in the education curriculum.

Thus, the basic preparations to educate school librarians to teach IL in schools require school librarians' induction programmes whereby the IL courses and IL instruction (pedagogy) are introduced to them. The programmes provide support to them and create opportunities of learning from the best practices.

The IL professional developments provide a continuous improvement process where the developments continually update themselves acquiring new knowledge and



skills so that they remain current in content and in practice. These will provide a continuous process for IL learning and teaching and follow-up of the ILE implementation progress. These preparations equip school librarians to be ready to take up responsibilities to become IL educators.

The ILE implementation progress needs collaborations from the school management and support from the principal in order for the plan to be successful. In this respect, the basic collaboration of school librarians and subject teachers to plan and teach IL will ensure the success of ILE in classroom and later in the SRC. Finally, by integrating IL in the education curriculum, it will ensure incorporation of IL in education.

The results show that professional development is an important factor in the theme of school librarians' development. As in the literature, school librarians' professional developments are described in the format of workshops, in-service opportunities, networking and conference session (Church, 2006). In practice, professional development is a foundation in any related experience or process that helps to churn out individuals' aptitude to full potential. Therefore, professional development embraces individuals, schools improvement and the professionalism of this career.

Therefore, the local school librarians may need more exposure concerning local or international school libraries' associations or any link to among these communities. There is a need to build the networking and contacts with their associates abroad. They need wide opportunities to connect with and attend school libraries' international

meetings or conferences. More often, these international opportunities and collaboration may be limited to ETD officers and are out of reach from school librarians. Martin (2011) suggests that school librarians should seek opportunities for professional development and hold active memberships in a variety of professional organizations. He further emphasizes that school librarians should use all possible opportunities to increase their skills and abilities by participating in professional development opportunities, mentoring people who are new to the profession, reading professional journals and literature and by attending professional conferences for networking with other school librarians, professionals can update themselves with current trends and issues of professional interest.

School librarians' development is important as school librarians need to be prepared in ILE courses such as IL instructions (pedagogy) so that they are ready to introduce ILE to teachers and students.

As in the literature, teachers and school librarians are the initiators and providers; they are the models to teach IL skills along with research strategies. It is suggested that tertiary teacher-training institutions need to include IL as an integral part of their courses. As the result, the key to IL implementation is through education and ties in school librarians and teacher training. In general, their education programmes have made significant progress in addressing IL (Probert, 2006). These teachers will have positive attitude and explicit teaching skills (Doyle, 1992; Duke & Ward, 2009; Probert, 2006; 2008).

Therefore, the presence of qualified school librarians in schools is critical to the success IL implementation. School librarians with leadership quality consolidated by teaching experience will ensure the integration of IL skills and strategies into curriculum by collaborating with administrative staff, teachers, students and parents (Eisenberg, 2006). This collaboration should create a school instructional programme that increases learning opportunities and strengthens learning of students. Thus, properly trained school librarians with credential qualifications will help establish a solid foundation of IL implementation in schools.

The factor loading shows that it is important that school librarians collaborate with subject teachers to plan and teach IL in the classroom. As the literature shows that school librarians are at the front line in practising collaborative planning, teaching and evaluating with teachers to support students' learning in curricular areas and developing IL skills in such way that school librarians contribute positively to student achievement as found in several studies (Haycock, 2003; Hockersmith, 2010; Lance & Loertscher, 2005; Montiel-Overall, 2005; Warner, 2008).

#### **5.3.5.4 Factor 4: Infrastructure**

The two items for Factor 4 represent the infrastructure facilities in schools as in Table 5.38. The overall responses to these items were very positive. The respondents felt that it is somewhat important (51.3%) and extremely important (39.7%) to have information technology facilities in schools. They also felt that it is somewhat important (51.0%) and extremely important (42.8%) to have school libraries that function as

information centres. Only less than 10% of respondents indicated that it is not important to have Information technology facilities in schools or school libraries function as information centres.

Table 5.38 Infrastructure

<b>Items</b>		Not important at all	Somewhat not important	No opinion either way	Somewhat important	Extremely important
Q60	Information technology facilities in schools	2 (0.3%)	12 (1.7%)	50 (7.0%)	364 (51.3%)	282 (39.7%)
Q61	School libraries function as information centres	0 (0%)	6 (0.8%)	38 (5.4%)	362 (51.0%)	304 (42.8%)

Therefore, the necessary foundation of ILE in school requires infrastructure facilities including 24 hours' electricity supply, internet connection and computer facilities. These will provide the basic infrastructure requirement to improve and establish the development of ILE in schools.

It is important that schools equipped with infrastructure can contribute better to the success and advancement of the IL implementation to achieve a wholesome school literacy approach (Henri, Boyd, & Eyre, 2002; Williams & Wavell, 2002). This also supported by Bruce (2002), who believes that the key implementation of IL involves experiences of information use in the classroom to create opportunities for critical reflection on the learning process as well as to foster awareness in learners of what they have learned. The IL education programmes need to have information technology infrastructure in school.

Thus, schools equipped with advanced technological infrastructure may not automatically lead to a situation of students and teachers being skilful to utilize technology tools as information literate individuals (Intan Azura, Majid, & Foo, 2008). There is a need to build a strong networked information technology infrastructure facilitates the usage of information resources in schools and beyond (Todd, 2008). These will collectively with the technology infrastructure in schools, school libraries can provide a dynamic learning environment in which students adapt to and are equipped with necessary skills in using the information technologies.

### **Summary**

Basing on the initial proposed framework, there were five distinct factors from the literature that influenced ILE implementation. The theme of curriculum is divided into two factors, namely Professional Development and Teaching and Learning Strategies. Three themes such as Policies, Standards and School Librarians' Requirements are merged into one factor, that is, IL Policies and Standards. The theme Infrastructure remains the same.

Thus, the results from the interview conclude 4 factors, namely Professional development Teaching and Learning Strategies, IL Policies and Standards and Infrastructure as shown in Table 5.39.

Table 5.39 Factors before and after interviews

Interviews	After interviews
Curriculum	Professional Development
	Teaching and Learning Strategies
Policies	Information Literacy Policies and Standards
Standards	
School Librarians' Requirements	
Infrastructure	Infrastructure

### 5.3.6 Open-ended questions

The open-ended questions in the survey have offered the respondents an opportunity to provide additional information as well as their opinions regarding any aspects needed for IL implementation in schools. The only one open-ended response question for this study is the following:

#### 62. In your opinion, what other aspects are needed for implementing information literacy in your school?

The open-ended responses in the survey serve to clarify the suggestion made that is lacking in the survey. From the 710 respondents, 352 respondents answered the open-ended question. The answers have been categorized into five themes as in Table 5.40.

The highest respondents, 135 (38.35%) suggest better infrastructure facilities such as computers and internet connections in schools. 118 (33.52%) of the respondents

suggest that some kind of IL professional development is needed. 49 (13.92%) of the respondents suggest some kind of IL Policies and Standards is required in schools while 8 (2.8%) of others suggest that schools need some kind of financial assistance if to implement IL in schools.

Table 5.40 Theme from the open-ended question

Theme	Occurrence (Percentage %)
Professional Development	118 (33.52%)
Infrastructure	135 (38.35%)
Information Literacy Policies and standards	49 (13.92%)
Teaching and Learning Strategies	18 (5.11%)
Others	8 (2.8%)

Overall, most of the respondents are supportive of IL implementations but found that schools still need much support from MoE if ILE is to be implemented successfully.

#### 5.4 Summary of the Chapter

The findings show that school librarians are ready in their cognitive and functional readiness for the ILE implementation in Malaysian Schools. However, they are ‘approaching readiness’ in their technical readiness. The findings indicate that professional qualifications influence the school librarians’ cognitive, functional and technical readiness. The experiences only influence the school librarians’ technical readiness. The findings point out four organizational factors: a). IL Policies and standards, b). Teaching and Learning Strategies c). Professional Development and d). Infrastructure will complete and consolidate in ILE implementation. Therefore,

School Librarians' Readiness and Organization Factors will strengthen the implementation of ILE in Malaysian secondary schools.



## Information Literacy Implementation Readiness Framework

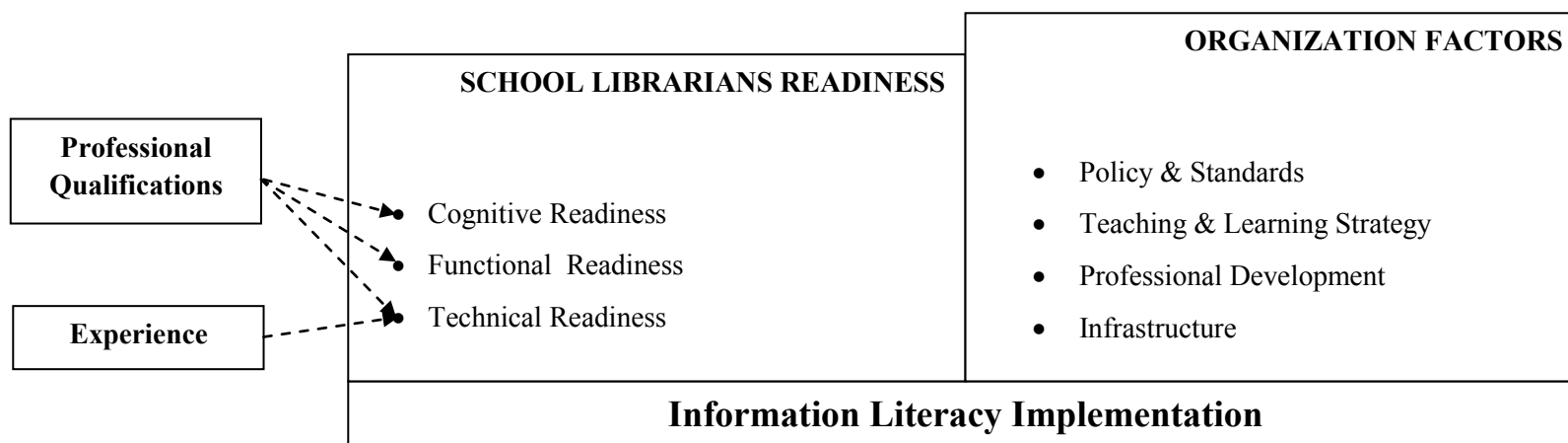


Figure 5.2 Proposed Information Literacy Readiness Framework

## **CHAPTER 6**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **6.0 Introduction**

This chapter presents a summary of the results and conclusions drawn from the analysis of the data. Conclusions, with regards to the school librarians' readiness, are based on their cognitive, functional and technical readiness which arises from their perceptions of information literacy (IL), their understanding of the importance of information literate attributes, their perceived role as IL educators, their level of self-assessed IL skills and the organizational factors affecting the information literacy education (ILE) implementation in Malaysian secondary schools (Section 1.5, pg. 11-12).

#### **6.1 Restatement of the Problem**

In general, the school librarians as leaders in ILE are the key to the ILE implementation in schools. As there is considerable evidence in the literature or research about ILE in Malaysia suggest that ILE is embedded within the teaching (Abrizah, 2008; Chan, 2002; Education Technology Division, 2005; Edzan, 2008; Fatimah, 2002; Musa, 2002; Yusoff, 2006). In spite of this, there is no concrete empirical research to confirm or deny the implementation of IL in the school curriculum (Halida et al, 2011; Saidatul Akmar, Dorner & Oliver, 2011). Norhayati (2009b) claims that school librarians should be capable of providing ILE and also be prepared in the educational sense to provide ILE in their schools (Norhayati, 2009b). Yet, based on the

research by Tan and Singh (2008), the school librarians in the district of Hulu Langat in Selangor, Malaysia appear to be inadequate in IL skills and competencies.

Other researchers assert that there seems to be a lack of opportunity for them to perform the role of the school librarians as they are not trained in ILE (Edzan & Mohd Sharif, 2005; Saidatul Akmar, Dorner & Oliver, 2011, Kamal, & Normah, 2012b). Others claim that there is a lack of official ILE policy (Edzan & Mohd Sharif, 2005; Saidatul Akmar, Dorner & Oliver, 2011). Even though school librarians may perceive their status as high, research testifies to the weakness of school librarians' IL competencies in handling the task to teach IL and ILE implementation in school.

## **6.2 Summary of the study**

With regards to the problems and sub-problems stated, the main aims of the study were to determine the readiness of the school librarians towards the implementation of information literacy in schools. It also investigates the factors that influence information literacy implementation in Malaysian schools (Section 1.5, pg. 11-12). Therefore, this research was designed to investigate based on the research objectives as below:

1. To explore school librarians' perception about information literacy implementation in Malaysian secondary schools.
2. To explore school librarians' readiness for information literacy implementation in Malaysian secondary schools.
3. To determine the organizational factors influencing the implementation of information literacy education in Malaysian secondary schools.

The following are the research questions and sub-research questions that aid in understanding about general perception about IL implementation, school librarian readiness, the manner how experience and qualifications influence school librarians' readiness and the organizational factors influencing the implementation of IL in secondary school in Malaysia. This study aimed to answer the following questions in relation to the stated objectives.

1. What is the general perception of school librarians' about information literacy implementation in Malaysian secondary schools?
2. What is the level of school librarians' readiness for information literacy implementation in Malaysian secondary schools?
  - i. What is the level of school librarians' cognitive readiness?
  - ii. What is the level of school librarians' functional readiness?
  - iii. What is the level of school librarians' technical readiness?
4. Do experience and professional qualifications influence school librarians' readiness?
  - i. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the three levels of school librarians' experience?
  - ii. Is there a statistical significant mean difference in the school librarians' cognitive readiness across the four levels of school librarians' professional qualifications?
  - iii. Is there a statistically significant mean difference in school librarians' functional readiness across the three levels of school

librarians' experience?

iv. Is there a statistical significant mean difference in the school

librarians' functional readiness across the four levels of school

librarians' professional qualifications?

v. Is there a statistically significant mean difference in school librarians'

technical readiness across the three levels of school librarians'

experience?

vi. Is there a statistical significant mean difference in the school

librarians' technical readiness across the four levels of school

librarians' professional qualifications?

5. What are the organizational factors influencing the implementation of  
information literacy in Malaysian secondary schools?

Data were collected from the first phase (interview) that involved six school librarians and two education technology education officers. The second phase (questionnaire) involved 710 school librarians from all the states in Malaysia. The data were analyzed and discussed. Subsequently, this chapter concludes the research.

### **6.3 Main Findings**

This section presents the findings of the research based on three major research objectives.

### **6.3.1 Research Objective 1**

**To explore school librarians' perception about information literacy implementation in Malaysian secondary schools.**

The researcher explored the school librarians' perception about IL implementation in Malaysian secondary schools through interviews in phase one of the research. Based on the interviews, it was found that school librarians were concerned about two main issues. Primarily, their own understanding about the concept of IL and its literate attributes, their role as IL educators and the IL skills they themselves have. School librarians' opinion differed based on their experience and qualifications. Secondly, they expressed concern about external factors, mainly the organizational factors such as policies, standards, curriculum, professional development and infrastructure to support, facilitate and strengthen the ILE implementation.

The findings revealed an issue that needed further examination that is the school librarians' readiness in implementing IL in school. The readiness is measured on the school librarian's self-perception on three scales; cognitive readiness (process of knowing, perceiving, understanding IL concepts and attributes of an information literate person); functional readiness (how school librarians perceive their roles in the implementation of IL in education) and technical readiness (self-assessed IL skills among school librarians).

### **6.3.2 Research Objective 2**

**To explore school librarians' readiness in IL implementation in Malaysian secondary schools.**

This research provides an insight of school librarians' cognitive, functional and technical readiness.

The cognitive readiness is a measure of school librarians' understanding and perception about IL as a concept and their ability to identify the attributes of an information literate person. The findings indicate that they are ready in their cognitive readiness. These show that they are clear that IL is a set of skills that can be learned to enable them to access, evaluate and use information from a variety of sources. They know that as an information-literate person, they must have the necessary attributes. The information-literate attributes requires them to accurately recognize the information needed, as well as recognize the need for information. They know how to formulate questions based on information needs. They know how to identify potential sources of information and develop successful search strategies to search for information. They are able to be access sources of information through computer-based and other technologies. Once they have obtained the information, they are able to organize information for practical applications. They are able to integrate the information through the knowledge they have and use the information in critical thinking and in problem solving.

The findings generally contradict with the findings of Norhayati (2009b)'s research which indicates that school librarians appear not to understand the IL concept because they tend to misunderstand it as information communication technology.

The school librarians' functional readiness is based on school librarians' understanding and ability to carry out their tasks based on their role as educators. It is measured based on how school librarians perceive their roles as IL educators. The findings indicate that Malaysian school librarians are ready in their functional readiness.

Being functional ready, school librarians are able to fulfill these characteristics: able to train teachers during in-house training programs to incorporate IL knowledge; play a leadership role in educating students on the importance of IL skills and perform as information specialists; provide reference services in school resource centres. They view their role as supporting teachers and students and also view it as their role to provide information.

Thus, the findings confirm that school librarians are the instructional partner to foster IL education by providing resources not only for the students but also for professional resources and support for teachers as suggested by Li (2006), Church (2007) and Abrizah & Zainab (2008). School librarians are resource managers (Hockersmith, 2010) as well as multi-tasking as teachers, collaborators, curriculum leaders, instructional leaders, information specialists, instructional technologist, programme managers and advocates. They are also the facilitators to student learning to the greatest possible extent (Church, 2008; Gbaje, 2008; Novo & Calixto, 2009; Reed, 2009).



The school librarians' technical readiness is described as having IL skills required for IL education. It is measured based on school librarians' self-assessed IL skills. The findings indicate that they are approaching readiness in their technical readiness. This indicates that they demonstrate an average of self-assessed IL skills required for IL education

In order to be technically ready, school librarians need to be able to know and possess the Big Six Model IL skills. The findings provide evidence that the need of IL is essential, so school librarians are required to acquire and comprehend the IL skills as well as knowledge in order to assist, provide and teach IL in schools as suggested by Morizio & Henri (2003). Sit (2003) also stated that school librarians have to develop their technical competency in acquiring new skills and competencies notwithstanding disparities in technological and intellectual disciplines in this new learning paradigm. Other researchers emphasize that school librarians' technical skills are a fundamental factor, as they need better IL skills to provide services and to perform their tasks in the school libraries (Combes, 2008; Tan, Gorman & Singh, 2012).

As a result, the school librarians are ready in their cognitive and functional readiness, whereas they are only approaching readiness in their technical readiness in the IL implementation in Malaysian secondary schools.

### **Do experience and professional qualifications influence school librarians' readiness?**

The influence of professional qualifications on school librarian's readiness is significant in cognitive, functional and technical readiness (as shown in Table 5.38, page 189). The findings indicate that In-service SRCM courses of one semester or more or Tertiary level in LIS influences school librarians' cognitive, functional and technical readiness. Thus, professional qualifications are needed to facilitate their cognitive, functional and technical readiness.

This findings bear similarity to Farmer (2007)'s, research where she indicated that school librarians who have high regards for continuing education and pursuing a Master's degree have a deeper understanding of the profession as they hold a longer-term perspective.

In view of the fact that school librarians in Malaysia hold the minimum LIS qualifications, that is, the Basic Thirty-five Hours SRC Management Course, there is a need to improve the continuity education of LIS for school librarians. More often, school librarians may need to find out where to further their LIS education at Bachelor's degree level or higher and also its recognition by the Public Services Commission.

The influence of experience on school librarians' readiness is significant in leading to technical readiness. Experience facilitates technical readiness for the school librarians to learn and comprehend IL skills. The literature confirms that their experiences are a dominant factor of IL knowledge that is considered as a means and

strategy to learning opportunities for the teachers. Their prior learning, teaching combined with school librarians' experiences are the main principles for the new IL knowledge (Zepeda, 2008).

School librarians' experience influences their technical readiness in their professional IL learning (Williams & Coles, 2007). Thus, the Kolb's experiential learning theory (Kolb & Kolb, 2008; Kolb, 1984; Kolb, Boyatzis, & Mainemelis, 2000; Kolb & Plovnick, 1974) illustrates and justifies that school librarians make full use of their experience to smoothen and expedite their learning process.

Therefore, the school librarians' experience highlighted in the Kolb's experiential learning theory shows that their IL skills knowledge is created through the transformation of experience. Their experience is the foundation for the creation of knowledge as they transform their experience into knowledge. In this respect, their knowledge represents their self-assessed IL skills as their technical readiness.

### **6.3.3 Research Objective 3**

**To determine the organizational factors influencing the implementation of information literacy education in Malaysian secondary schools.**

The findings establish four organizational factors influencing the implementation of ILE. They are IL Policies and Standards, Teaching and Learning Strategies, Professional Development and Infrastructure.

The first factor, the IL Policies and Standards affirms a national IL agenda and a national IL standard as the foundation of IL implementation. The findings indicate that there is a need for IL education policy and guidelines to further enhance this groundwork. This is supported by the suggestion of Bruce (2002), that the establishment of IL programmes, guidelines and policies for teacher education accomplished together with National policies and guidelines targeting ILE and associate infrastructure in the wider community can only support such an emphasis on the educational system.

The findings also indicate that it is necessary to have a standardized IL training curriculum, LIS certification and standardized IL training modules for school librarians. They are to attend IL training and have the opportunities to continue their education in LIS. Besides, IL Policies and Standards for school librarians, there is a need for IL standards for students. The literatures support training as it changes and improves school librarians' attitudes in their wanting to improve job performance and career paths (Ford & Kozlowski, 1997; Rae, 2001; Rothwell, 2008). Thus, training improves school librarians' performance in order to achieve the best possible results in their job (Carliner, 2003). The higher quality teaching puts expectation on teachers to be well-qualified, highly motivated, knowledgeable and skilful throughout their careers (Day & Sachs, 2004a).

The second factor, Teaching and Learning Strategy suggests various IL implementation approaches. This includes teaching IL as a set of library-based skills, teaching IL in the school libraries, teaching IL as a separate subject within the school curriculum or integrating IL into the Information and Communication Technology

Literacy (ICTL) subject. Results indicate SL show preference for IL to be integrated into curriculum within subjects through collaboration with subject teachers. The literatures suggest many ways to implement IL (Doyle, 1992; Oberg, 2001; Singh et al, 2006a; Williams and Wavell, 2006; Horton, 2008; Intan Azura, Shaheen, & Foo, 2008). Therefore, the Ministry of Education has to decide on how to implement IL in the education curriculum within the ongoing reformation of the educational system as it is in the process of on-going education policy formulation and transformation.

The third factor, Professional Development requires school librarians to attend IL professional development, attend IL courses and learn IL instruction (pedagogy) on how to teach students. They are required to collaborate with subject teachers to plan and teach IL in classroom. All these require IL to be implemented in the education curriculum. Literatures support that the professional development will enable school librarians to extend their influence in supporting the learning of teachers and students (Moore & Trebilcock, 2003). Professional development will train school librarians to ensure that they constantly have updated information skills to serve their students effectively and improve their professionalism as school librarians (Clyde, 2004, 2005; Vega, 2006). They need to develop their personal competencies; and this is achievable from professional developments to complement and expand on their graduate education (Branch & Farmer, 2009).

The final factor, Infrastructure presented school libraries with functional information technology facilities. The electricity supply, functional internet connection and computer facilities enable school libraries to function as information centres.

Thus, these four factors support, facilitate and strengthen the implementation of ILE in Malaysian secondary schools.

#### **6.4 Conclusion**

IL is important in schools as students with better equipped IL skills, technological competencies and intellectual disciplines are ensured continuity in their learning (Sit, 2003). This lifelong learning takes place when there is application of information skills from primary through secondary school levels up to tertiary education.

As school librarians are expected to be IL educators in schools, they are the instructional partners to foster IL education. They have the responsibility to deliver IL skills to all students. They are also the provider of professional resources to students and teachers (Lance et al, 2000b). Thus, their role as information providers will enhance academic achievement.

This research investigated school librarians' perception about themselves in the implementation of IL in schools. It found that school librarians were indeed very concerned about their readiness in implementing ILE.

Cognitively school librarians are ready. They understand IL as a concept and are able to identify the attributes of an information literate person. They are able to identify the needs for information, access sources of information, search and use information. They have the cognitive readiness to be IL implementers.

As for the functional readiness, school librarians are also generally at a level of ready. It is measured based on how school librarians perceive their roles as IL educators. They understand and are able to carry out their tasks based on their role as educators. They are ready for their roles in providing reference services and supporting teachers and students. School librarians play a leadership role in educating students on the importance of IL skills. They are ready to perform as information specialists and they also understand their role as teachers' trainer. They are ready of their roles, especially how they viewed themselves as the leaders or innovators of IL implementation in schools. They have to be ready to embrace their role as IL champions in order to lead the other teachers in implementing it successfully across the curriculum.

In the area of technical readiness, the school librarians are 'approaching' ready. It is measured based on school librarians' self-assessed IL skills. These school librarians are moving towards having IL skills required for IL education. They demonstrate an average level of self-assessed IL skills required for IL education.

They are average in selecting the best sources of information, locating sources intellectually and physically, synthesizing information found in the sources, and presenting the information found. However, the findings indicate that they lack IL skills in searching for information using the keyword search, alternative keyword search and Boolean operators (And, Or, Not). This indicates that there is a need for further training to enhance their skills before they can be expected to implement IL initiatives in schools involving teachers and students.

School librarians' personal readiness in cognitive, functional and technical aspects enables them to be skilled and confident performers as IL educators. Their experience and professional qualifications help to consolidate their readiness in the ILE implementation.

Besides their personal readiness, organizational factors also contribute to the success of ILE implementation in school. Therefore, the stakeholders of MoE need to work on these organizational factors to ensure comprehensive achievements. The organizational factors are IL Policies and Standards, Teaching and Learning Strategies, Professional Development and Infrastructure. They will support, facilitate and strengthen the implementation of ILE in Malaysian secondary schools.

The IL Policies and Standards includes a national IL agenda, a national IL standard, IL education policy and guidelines that set the national foundation and framework of ILE implementation. Jointly, a standardized IL training curriculum, LIS certification, standardized IL training modules for school librarians and IL training prepare the school librarians in their LIS qualifications. The IL standards for students will set a benchmark for the ILE standard.

Teaching and Learning Strategies propose various IL implementation approaches. These include teaching IL as a set of library-based skills, teaching IL in the school libraries, teaching IL as a separate subject within the school curriculum and integrating IL into the Information and Communication Technology Literacy (ICTL) subject. IL



should be integrated into curriculum within subjects. The Ministry of Education should determine the methods to implement IL in the education curriculum.

School librarians need Professional Development continuously. They attend IL professional development, attend IL courses and learn IL instruction (pedagogy) on how to teach students. They are trained to updated IL skills and knowledge in order to expand their personal competencies and improve their professionalism as school librarians.

The success of ILE implementation requires a basic Infrastructure in school. The basic facilities such as electricity supply, functional internet connection and computer facilities are to be provided. They also extend functional information technology facilities in school libraries to school communities to function as information centres.

Therefore, both the school librarians' readiness and the organizational factors contribute to the success of ILE implementation. These components are to be incorporated so as to establish, facilitate, support and strengthen the implementation of ILE in Malaysian secondary schools.

## **6.5 Limitations**

The researcher has identified four limitations in this research. First, this research was limited to school librarians from secondary schools in all 13 states including three federal territories in Malaysia. This research investigates ILE in secondary schools only.

The findings therefore cannot be used to make a generalization of all the school librarians in the country.

Secondly, in terms of IL skills, the research was limited to the school librarians' self-assessed IL skills, based on the Big6 model. It did not an empirical assessment or measurement of the school librarians' actual IL skills.

Thirdly, in terms of IL implementation, the research focused only on school librarians' perception about the importance of IL implementation in secondary schools. It does not include an assessment of the actual practices evident in the classroom activities or library activities.

Lastly, in terms of theory, this research was limited to assessing the experiences and specific qualifications of school librarians. There could be other factors that could have an influence on their perception of successful IL implementations in schools. This study did not aim to examine these other factors.

## **6.6 Research's Contributions**

The researcher proposed an IL Implementation framework based on the findings of the study. School librarians' readiness was explored based on their perceptions of their cognitive, functional and technical readiness. What they perceived affects their knowledge and capabilities to provide ILE. Their abilities to perform their task require them to use their knowledge, skills or abilities (McCain and Tobey, 2004). These form their readiness that affects their abilities and willingness as well as provide prerequisite

knowledge and skills to perform the tasks (Hersey, Blanchard, & Johnson, 2001, Strohschen & Elazier, 2009). The school librarians' readiness forms the basis of IL implementation.

Their experiences and professional qualifications are the main sources of cognitive, functional and technical readiness. School librarians' experiences will improve their information skills, knowledge of IL application, their information literacy instructions (pedagogy) and their ability to develop and perform information ILE (Zepeda, 2008).

Thus, their readiness, experience and professional qualifications are maintained within and supported by organizational factors which require establishing administrative structures, that is, schools, teacher activities centres, education technology departments and divisions to support, facilitate and strengthen the implementation of IL. The researcher proposes the IL Implementation framework as shown in Figure 6.1.

## Information Literacy Implementation Readiness Framework

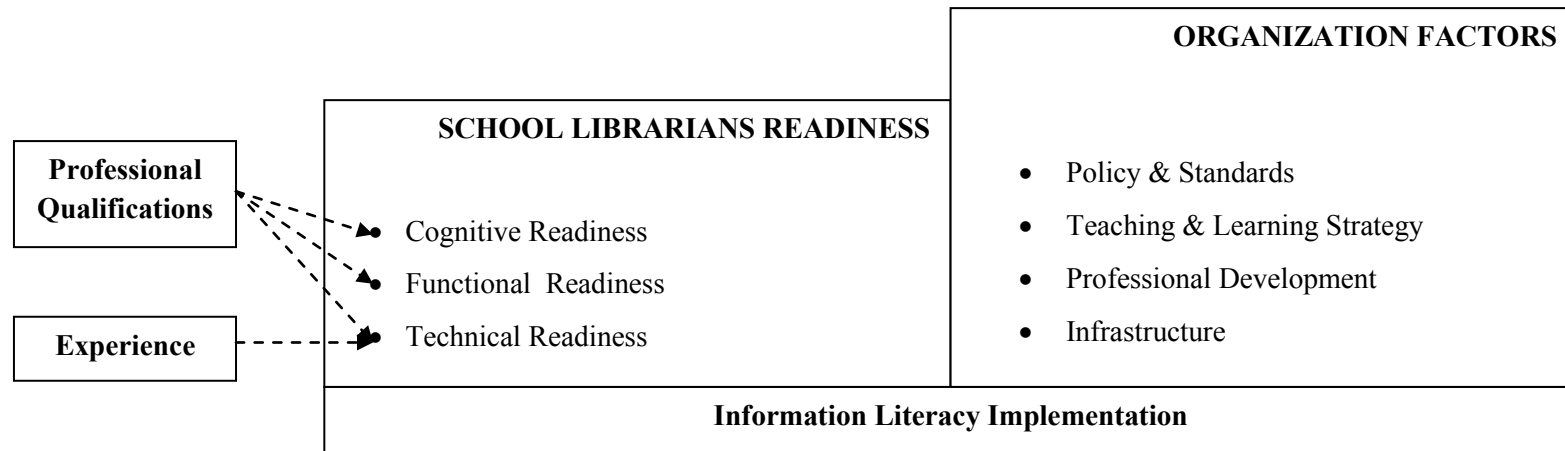


Figure 6.1 Information Literacy Implementation Readiness Framework

## SCHOOL LIBRARIANS' READINESS

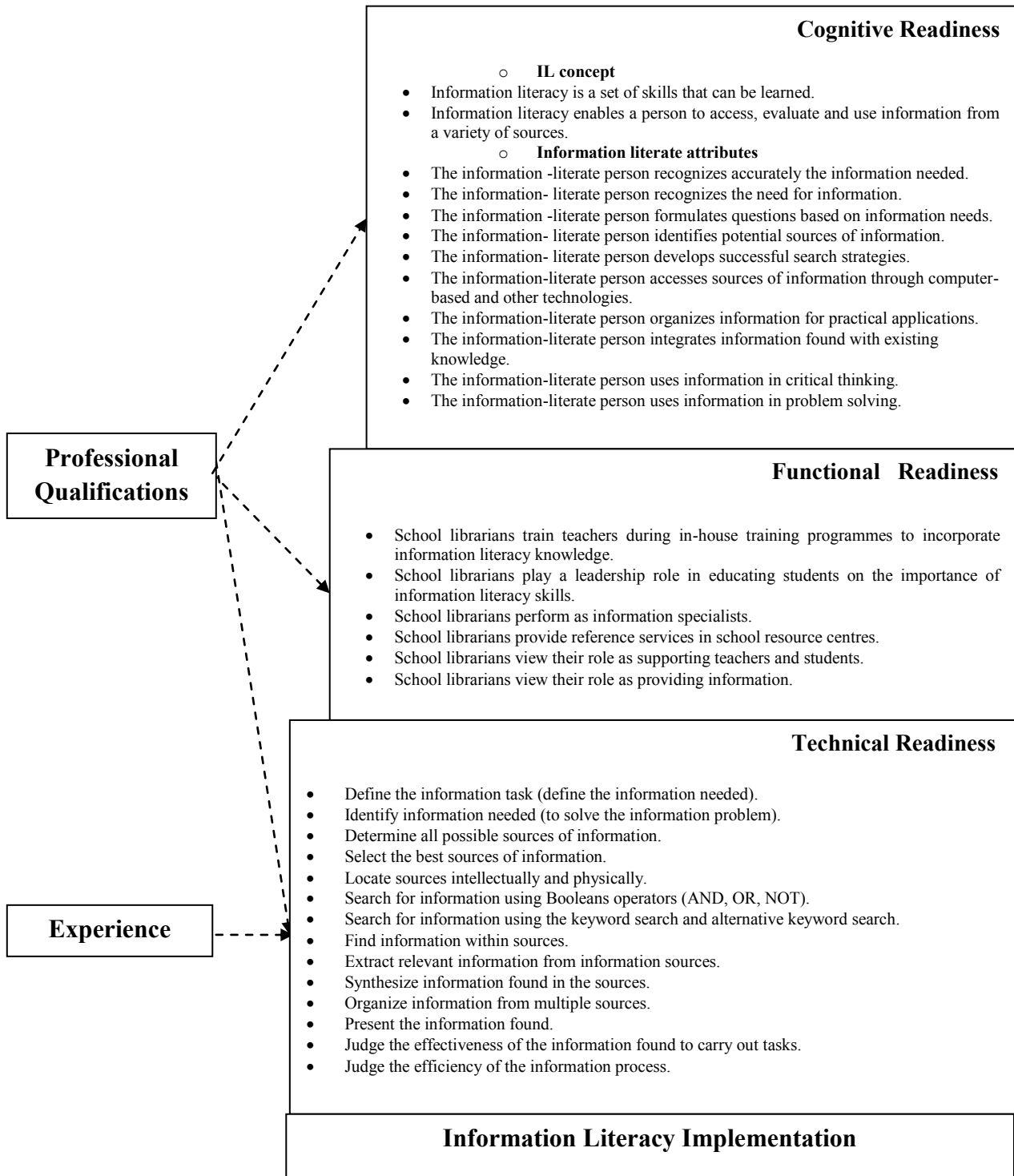


Figure 6.2 School librarians' Readiness

## ORGANIZATION FACTORS

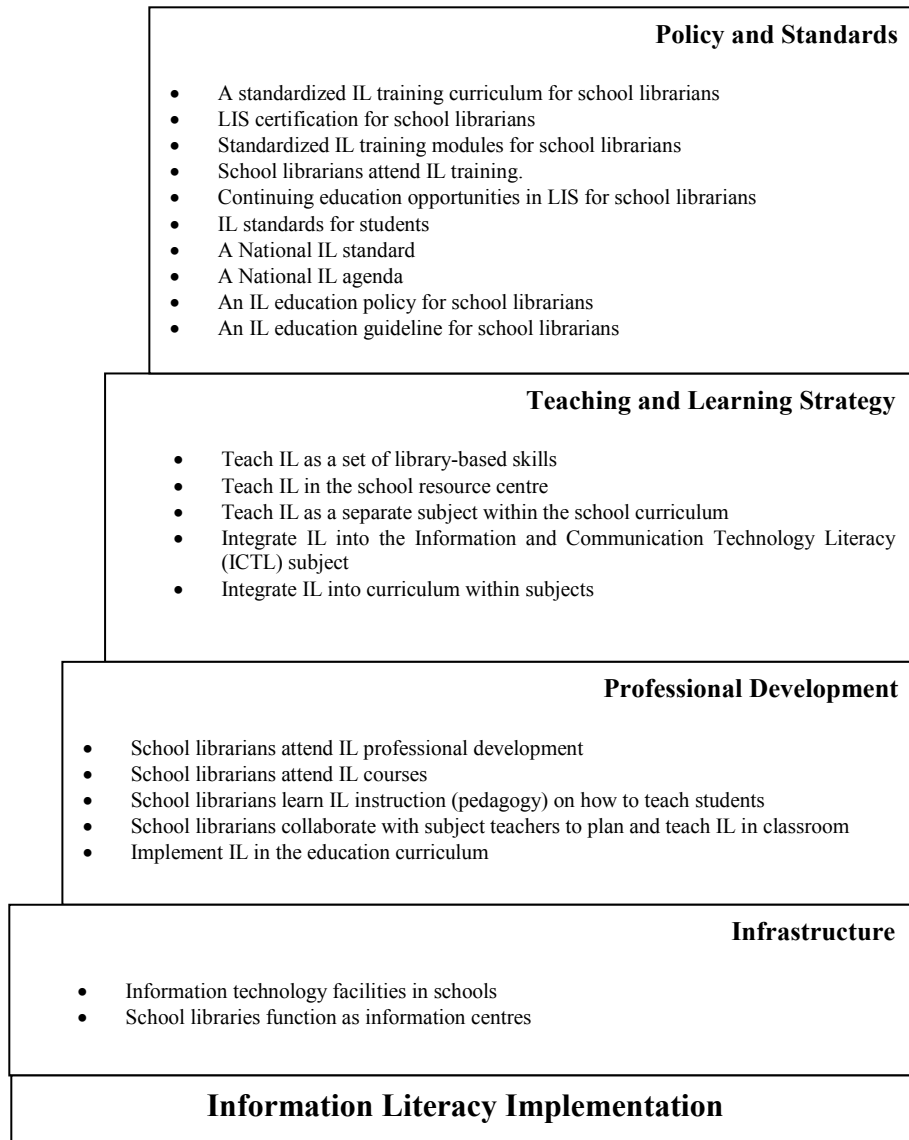


Figure 6.3 Organizational Factor

## **6.7 Recommendations**

Based on the findings of this research, several recommendations are put forward to enhance and support the relevant authorities responsible for the development of school libraries and school librarians in the education sector.

This research provides strong indications that ILE training is needed. It is recommended that more in-depth professional IL courses, IL instruction (pedagogy) be provided to school librarians. The need of IL professional development will further increase the students' learning achievements and their own capabilities and knowledge.

It is also obvious that there should be clear IL collaborations plans and IL implementation in the education curriculum. This is to create a better understanding of IL and competencies. It should also include appropriate ILE pedagogical approaches for school librarians to be ready as IL educators. ILE may include soft skills in human capital training.

The opportunities to meet during professional development will boost their self-confidence as school librarians (Farmer, 2007). They need an avenue to meet socially and professionally so as to encourage the development of a collaborative culture. It will be better if local associations can serve as forums for dialogue as the basis for the formation of lobby groups and as hubs for the distribution of information. They can also work to explore opportunities for meaningful professional development including seeking out critical friends to assist in research, school growth and development initiatives (Oldford, 2002).

The local school librarians may need more exposure concerning local or international school libraries' associations or any link to these communities. There is a need to build the network and contacts with their associates abroad. They need a wide opportunities to connect and attend any school libraries' international meetings or conferences. More often, these international opportunities and collaboration may be limited to ETD officers and are often out of reach for school librarians.

Even though there are new online information and services for school librarians to keep informed (Bahagian Teknologi Pendidikan, 2010; Sektor Pengurusan Sumber Pendidikan, 2010), this information is based on school libraries' management matters. They may need to access to more up-to-date professional librarianship texts, reference books or journals to keep informed with information and researches in LIS. They also need opportunities for scholarships to study locally or abroad as suggested by Lee, et al. (2003). Many have access to online social networking such as blogs, Face book, Nings to communicate with their international counterparts. This will encourage them to link up with international contacts to build a sense of belonging to school librarianship professional group and motivate them to further the career advancement in school librarianship.

The Ministry of Education's decision to include IL as a subject in the education curriculum will establish a strong foundation for ILE. The Ministry of Education should provide implementation methods such as teaching IL as a set of library-based skills, teaching IL in the school resource centre, teaching IL as a separate subject within the school curriculum, integrating IL into the Information and Communication Technology Literacy (ICTL) subject or integrating IL into curriculum within subjects.



Strong support from the relevant ministries in the government is needed to establish a national IL agenda and a National IL standard which would provide a concrete ILE structure and foundation. The relevant divisions in the Ministry of Education are recommended to provide an IL education policy for school librarians and an IL education guideline for school librarians.

In order to improve the ILE training for school librarians, it is recommended that a standardized IL training curriculum and standardized IL training modules be started for all school librarians. All school librarians are recommended to attend the IL training. More continuing education opportunities in LIS should be provided to them and the recognition of LIS certification for school librarians would provide a greater acknowledgment for qualified school librarians to further enhance the ILE implementations. The recognition of qualified school librarians in schools would motivate the school librarians to recognize their roles and contributions in school libraries. Therefore, the ministry should provide the opportunities and support for school librarians to specialize in school librarianship.

The Ministry of Education should make the LIS tertiary education the minimum requirement instead of the SRCM 35H for school librarians. Having qualified school librarian in schools is critical for the success of literate learners (Eisengberg, 2006). Ministry of Education recommended improving the criteria, qualifications, certification requirements and professional development for these teachers. As the stakeholder, it is recommended that MoE propose to the Public Service Department to create the position of school librarians in the education service.

It is recommended that Ministry of Education collaborate with library schools to train school librarians in LIS education at diploma or degree levels. They need to discuss and set up bilateral collaboration to train and produce qualified school librarians. However, according Day & Sachs (2004a), the higher expectations for higher quality teaching demand those teachers who are well qualified highly motivated, knowledgeable and skilful not only at the point of entry into teaching but also throughout their career.

It is recommended that schools and school libraries infrastructure be upgraded and maintained in functional conditions. Functional internet connections and computer facilities should be made available in all school libraries and schools.

### **Future school librarians in 21<sup>st</sup> century**

In terms of education, the school librarians of 21<sup>st</sup> century, the Future Learning and School Libraries (Australian School Library Association, 2013) affirm that the school librarians' role is essential in facilitating and collaborating in the exchange of information and creation of new knowledge for students. School librarians play an important role in designing and delivery of digital literacy, adopting digital citizenship approaches and creating awareness of cultural sensitivity in a digital environment.

The rapid technology innovation impacts the learning environment, where school librarians are the experts and facilitators of student collaborative learning. They are highly accomplished personnel who work collaboratively with colleagues to improve teaching practices. They, as resource aggregators, are to maintain both physical and

virtual collection and provide a range of resources to facilitate students' interaction and engagement, which can support learners in their educational and personal development. They, as literacy advocates can integrate multiple literacy into the curriculum to improve the learning environment. They, as technology innovators, are to provide equity of access to a range of digital resources and technologies, expertise in using technologies, guidelines and laws for intellectual property, as models upholding the attributes of responsible digital citizens and also to support teacher colleagues in using technologies to develop new ways of teaching and learning. They are to actively engage in leading and demonstrating the use and application of action research to secure data to make known professional decision making for the future development of the school learning community.

## **6.8 Future Research**

The results of this study offer several implications for future research, methodological as well as practical implementation of ILE in schools. Methodologically, the study was based on a quantitative research to examine the general views of school librarian in Malaysia about ILE implementation and to generalize the factors that influenced successful ILE. However, in the first phase of the study, interview method was used to generate items for the study instrument. Though the focus was to obtain the general view of issues worth investigating further, the interviews also revealed contradicting opinions from the school librarians. They were not clear about their knowledge of IL and what constitutes information literate attributes. Their opinion about their IL skills and their roles as IL educators was also unclear. The selection of interview participants could have had an impact on this as the numbers were small and limited to SL from 6 schools and two education officers only. However, it is

recommended to use qualitative interview method for future research to obtain an in-depth investigation into school librarians' readiness. By using interview methods, the number of sample can be reduced and the outcome can be focused to understanding the phenomenon and study SL readiness in within the context of Malaysian school librarianship. The three sub-scales of readiness could be refined through this method.

Although there are local ILE studies such as Norhayati et al. (2006b) and Norhayati (2009b), that use the Big Six model, there is a need for more research to examine how relevant it is to apply existing IL models, mostly derived from foreign educational systems, to achieve IL standards in the Malaysian education environment. We may need to know if these IL models and standards need any adaptations to suit the Malaysian education curriculum.

The results of this study infer that higher qualified and more experienced school librarians will have a better perception of their role as IL educators and their IL skills. There is a need for future research to investigate and determine how school librarians with LIS qualifications play their role in influencing the ILE implementation in schools. It would be valuable to the profession to investigate on how the linking roles of experienced school librarians can include ILE into practice in schools through school libraries.

## **6.9 Concluding Statement**

This research has provided empirical evidence of school librarians' readiness in IL implementation. This study has attempted to introduce cognitive, functional and technical readiness as a measure of school librarians' overall readiness for IL

implementation in Malaysian schools. Their understanding about IL, self-assessed IL skills, recognition of information-literate attributes and school librarians' role as IL educator in ILE in Malaysian secondary schools is presented from school librarians' perspectives. This is consolidated by the school librarians' experience and qualifications. It is further strengthened by need for the four external factors such as IL Policies and Standards, Teaching and Learning Strategies, Professional Development and Infrastructure in facilitating ILE implementation.

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## **Publications Related to this Study**

- **Conference Papers**

- Tan, S.-M., & Singh, D. (2008a). An Assessment of the information literacy levels of library and media teachers in the Hulu Langat district, Malaysia. In the *Towards an information literate society*. Paper presented at the International Conference on Libraries, Information and Society, ICoLIS, 18-19 November: Petaling Jaya, Kuala Lumpur, Malaysia.
- Tan, S.-M., & Singh, D. (2009). *Competencies for teacher-librarians: The Malaysians perspective; Kompetensi Guru Perpustakaan dan Media: Perspektif Malaysia*. Paper presented at the Indonesian Convention and Seminar on School Librarian. 27-29 May: Jakarta, Indonesia.
- Tan, S.-M., & Singh, D. (2010). Preliminary insight of information literacy competencies among school library media teachers. In the *Diversity Challenge Resilience School Libraries in Action*. Paper presented at the Fourteenth International Forum on Research in School Librarianship, incorporating the 12th Biennial School Library Association of Queensland conference, 27 September -1 October: Brisbane, Australia.

- **ISI-Cited Publication**

- Tan, S.-M., Gorman, G., & Singh, D. (2012). Information Literacy Competencies among School Librarians in Malaysia. *Libri*, 62 (1), 98–107.
- Tan, S.-M., Kaur, K. & Singh, D. School Librarians' Readiness for Information Literacy Implementation in Secondary Schools. Submitted /Revision to *Malaysian Journal of Library and Information Science*.

- **Book Section**

- Tan, S.M. (2013). The Taman Rakan Primary School Library. In Asselin, R., & Doiron, R. (2013). *Linking literacy and libraries in global communities*. London, UK: Ashgate Publishers.

## **Membership**

1. International Federation of Library Associations and Institutions

Membership: Individuals Student Affiliates, Year 2008 - present

2. International Association of School Librarianship

Membership: Student membership, Year 2008 - present

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**INTERVIEW MODERATOR GUIDE**


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**SCHOOL LIBRARIANS INFORMATION LITERACY PREPAREDNESS**

**Date and Time:** \_\_\_\_\_  
**Venue:** \_\_\_\_\_  
**Interviewer:** Shyh-Mee Tan

**Purpose of the Focus Group**

An exploratory study is made of the school librarians' information literacy preparedness in schools.

**Section A:**

*Background information about participants' preparedness in implementation of information literacy in schools.*

*The purpose is to determine how school librarians perceive their preparedness in the implementation of information literacy in schools.*

*I would like to know your view on information literacy in school and the information literacy status in Malaysian education. The discussion will focus on your opinion about the information literacy implementation in schools.*

1. Can you tell me about yourself? Your experiences? Qualification, etc?
2. How long have you been in charge of the school library?
3. What are your main responsibilities as the school librarian?
4. What do you know about information literacy?
5. Would you consider yourself as an information-literate person? Why?
6. What do you know about information literacy implementation in schools?
  - a. Government policy? Standard policy? Integrated curriculum?
7. Have you had any formal training in ILE?
8. How do you think information literacy should be taught in schools?
9. What support do you need to teach IL in schools?
10. What are the setbacks of implementing information literacy in schools?

Thank you.

Ms Shyh Mee Tan  
 PhD Candidate,  
 Library and Information Science Unit,  
 Faculty of Computer Science and Information Technology,  
 University of Malaya,  
 50603 Kuala Lumpur.



**UNIVERSITY  
OF MALAYA**  
K U A L A L U M P U R

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6 April 2010

To Whom It May Concern

**QUESTIONNAIRE ON INFORMATION LITERACY  
AMONG SECONDARY SCHOOL LIBRARY MEDIA TEACHERS**

This is to certify that Ms. Tan Shyh Mee is a candidate for the PhD degree here at the Faculty of Computer Science and Information Technology, University of Malaya.

As part of her doctoral research, she is conducting a survey on information literacy among secondary school library media teachers in Malaysia

The findings of the study will be of interest to the library media teachers and the Ministry of Education. The Faculty of Computer Science and Information Technology, University of Malaya will also be interested in the findings of the study and would greatly appreciate your responses in relation to her research.

Your cooperation in completing the questionnaire will be greatly appreciated.

Thank you.

Yours sincerely,

**ASSOC. PROF. DR. DILJIT SINGH**

*in the capacity of Supervisor to Ms. Tan Shyh Mee*

**PROF. Madya DR. DILJIT SINGH**  
**TIMBALAN DEKAN (IJAZAH TINGGI)**  
**FAKULTI SAINS KOMPUTER &**  
**TEKNOLOGI MAKLUMAT**  
**UNIVERSITI MALAYA**  
**50603 KUALA LUMPUR**



MS ISO 9001:2000 REG. NO. AR 2760

**Faculty of Computer Science & Information Technology,  
University of Malaya, 50603 Kuala Lumpur, Malaysia**

Tel: (603) 79676300 / (603) 79676301 • Fax: (603) 79579249 / (603) 79676339  
<http://www.fsktm.um.edu.my>





BAHAGIAN PERANCANGAN DAN PENYELIDIKAN DASAR PENDIDIKAN  
KEMENTERIAN PELAJARAN MALAYSIA  
ARAS 1 - 4, BLOK E - 8,  
KOMPLEKS KERAJAAN PARCEL E  
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN  
62604 PUTRAJAYA

Telefon : 03-88846591  
Faks : 03-88846579

Rujuk. kami : KP(BPPDP)603/5/JLD4(167 )  
Tarikh 21 April 2010

Puan Tan Shyh Mee  
42 Jln KP 3/2 Tmn Kaianq Prima  
43000 Kaianq  
Selangor

IC: 680623065014

Tuan/Puan,

**Kelulusan Untuk Menjalankan Kajian Di Sekolah, Institut Perguruan, Jabatan Pelajaran Negeri dan Bahagian-Bahagian di Bawah Kementerian Pelajaran Malaysia**

Adalah saya dengan hormatnya diarah memaklumkan bahawa permohonan tuan/puan untuk menjalankan kajian bertajuk:

***An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers***

diluluskan.

2. Kelulusan ini adalah berdasarkan kepada cadangan penyelidikan dan instrumen kajian yang tuan/puan kemukakan ke Bahagian ini. Kebenaran bagi menggunakan sampel kajian perlu diperoleh dari Ketua Bahagian / Pengarah Pelajaran Negeri yang berkenaan.
3. Sila tuan/puan kemukakan ke Bahagian ini senaskah laporan akhir kajian setelah selesai kelak. Tuan/Puan juga diingatkan supaya mendapat kebenaran terlebih dahulu daripada Bahagian ini sekiranya sebahagian atau sepenuhnya dapatan kajian tersebut hendak dibentangkan di mana-mana forum atau seminar atau diumumkan kepada media

Sekian untuk makluman dan tindakan tuan/puan selanjutnya. Terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

(DR. SOON SENG THAH)  
Ketua Sektor,  
Sektor Penyelidikan dan Penilaian  
b.p. Pengarah  
Bahagian Perancangan dan Penyelidikan  
Dasar Pendidikan  
Kementerian Pelajaran Malaysia

s.k.

Pengarah  
Bahagian Pendidikan Guru

Prof. Madya Dr. Diljit Singh  
Fakulti Sains Komputer & Teknologi Maklumat  
Universiti Malaya  
50603 Kuala Lumpur





جابتن فلاجانرلن  
**JABATAN PELAJARAN KELANTAN**  
**JALAN DOKTOR,**  
**15000 KOTA BHARU,**  
**KELANTAN DARUL NAIM.**

**TELEFON**

Pejabat Am : 09-741 8000  
 Pengarah : 09-741 8001  
 Timb Pengarah : 09-741 8054

FAKS : 09-748 2554

Web : <http://apps.emoe.gov.my/jpnkelantan>



Ruj. Kami : JPKn/SPS/1403/106/5 Jld 7(26)  
 Tarikh : 30 Mei 2010



**Tan Shyh Mee**  
 Pelajar Pasca Siswazah  
 D/a Dr. Diljit Singh  
 Fakulti Sains Komputer dan Teknologi Maklumat  
 Universiti Malaya  
 50603 Kuala Lumpur

Tuan/Puan,

**KEBENARAN MENJALANKAN KAJIAN / PENYELIDIKAN DI SEKOLAH KERAJAAN /  
 BANTUAN KERAJAAN DI NEGERI KELANTAN**

Adalah saya dengan hormatnya diarah merujuk surat permohonan tuan / puan mengenai perkara di atas.

2. Surat kebenaran dari Pengarah Bahagian Perancangan & Penyelidikan Dasar Pendidikan, Kementerian Pelajaran Malaysia Rujukan: KP(BPPDP)603/5/JLD4(167) bertarikh 21 April 2010 berkaitan.

3. Jabatan Pelajaran Kelantan tiada halangan bagi tuan/puan menjalankan kajian/penyelidikan seperti tajuk:

*An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers*

4. Kelulusan ini adalah dihadkan berdasarkan kepada tajuk kajian / penyelidikan yang dikemukakan ke jabatan ini bagi tempoh: **01 Jun 2010 hingga 31 Disember 2010.**

5. Sekolah-sekolah yang terlibat adalah: **Sekolah-Sekolah Di Negeri Kelantan.**

6. Tuan/Puan dinasihatkan supaya terlebih dahulu berbincang dengan Pengetua/Guru Besar sekolah-sekolah berkenaan sebelum kajian /penyelidikan dijalankan.

Sekian terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

( **ABDUL AZIZ BIN MOHD. ZAIN** )  
 Penolong Pendaftar Sekolah dan Guru  
 b.p Pendaftar Sekolah dan Guru  
 Jabatan Pelajaran Kelantan



Sk

i. Pengarah, Bahagian Perancangan & Penyelidikan Pelajaran  
 Kementerian Pelajaran Malaysia.

iii. Pengetua / Guru Besar  
 Sekolah berkenaan

ii. Pegawai Pelajaran Daerah: PPD berkenaan.  
 Nm/Borang Kajian 2.com.1

"MERINTIS PEMBAHARUAN : SATU MISI NASIONAL"  
 "PENDIDIKAN CEMERLANG BERTARAF DUNIA"



Rujukan Kami : JPWP 12-21/Jld.8-10/(122)  
Tarikh : 17 MEI 2010

Tan Shyh Mee  
d/a Dr. Diljit Singh Fakulti Sains Komputer  
dan Teknologi Maklumat  
Universiti Malaya 50603 Kuala Lumpur

Y. Bhg. Dato/Datin/Tuan/Puan,

**KEBENARAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH, MAKTAB-  
MAKTAB PERGURUAN, JABATAN-JABATAN PELAJARAN DAN BAHAGIAN-  
BAHAGIAN DI BAWAH KEMENTERIAN PELAJARAN MALAYSIA**

Dengan hormatnya saya diarah memaklumkan bahawa permohonan Y. Bhg.  
Dato/Datin/Tuan/Puan untuk menjalankan kajian bertajuk :-

**" An Assessment Of Information Literacy Competencies Among Secondary  
School Library Media Teachers "**

adalah diluluskan tertakluk kepada syarat-syarat berikut:-

- Kelulusan ini adalah berdasarkan kepada apa yang terkandung di dalam cadangan penyelidikan yang telah diluluskan oleh Kementerian Pendidikan Malaysia.ila kemukakan surat kebenaran ini ketika berurusan dengan Pengetua/Guru Besar sekolah berkenaan.
- Kelulusan ini untuk sekolah-sekolah di Wilayah Persekutuan Kuala Lumpur sahaja
- Y. Bhg. Dato/Datin/Tuan/Puan dikehendaki mengemukakan senaskah hasil kajian tuan/puan ke Jabatan ini sebaik sahaja ianya siap sepenuhnya.
- Kebenanar ini sah sehingga 31.12.2010

Sekian, terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

*A. S. Nordin*

( SITI HALIMAH BT SYED NORDIN )  
Penolong Pendaftar Institusi Pendidikan  
Jabatan Pelajaran Wilayah Persekutuan  
b.p Ketua Pendaftar Institusi Pendidikan & Guru  
Kementerian Pelajaran Malaysia

CERTIFIED TO ISO 9001:2000, CERT NO : AR 4166

**"CEMERLANG DALAM KALANGAN YANG CEMERLANG"**

(Sila catatkan no. rujukan Jabatan ini apabila berurusan)





JABATAN PELAJARAN PERAK  
JALAN TUN ABDUL RAZAK,  
30640 IPOH,  
PERAK DARUL RIDZUAN.

Telefon : 05-501 5000  
Faks : 05-527 7273  
Portal : <http://www.pelajaranperak.gov.my>

**“ 1 MALAYSIA : RAKYAT DIDAHULUKAN, PENCAPAIAN DIUTAMAKAN ”**

Ruj.Kami : J.PEL.PK.(AM)5114/4 JILD.4 (42)  
Tarikh : 13 Mei 2010

Puan Tan Shyh Mee  
42 Jln KP 3/2 Taman Kajang Prima  
43000 Kajang  
Selangor

Tuan,

**KEBENARAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH MENENGAH /  
RENDAH NEGERI PERAK**

Saya diarahkan merujuk surat tuan bertarikh 7 Mei 2010 yang ada kaitannya dengan surat Kementerian Pelajaran Malaysia bilangan KP(BPPDP)603/5/JLD.04 (167) bertarikh 21 April 2010 tentang perkara di atas.

2. Sukacita dimaklumkan bahawa pihak Jabatan Pelajaran Perak **tiada halangan** memberi kebenaran kepada tuan untuk menjalankan kajian dan soal selidik bertajuk “**An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers**” di sekolah-sekolah di negeri Perak dengan syarat mendapat persetujuan terlebih dahulu daripada Pengetua/Guru Besar sekolah berkenaan.

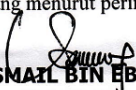
3. Sila tuan/puan kemukakan senaskhah laporan akhir kajian ke Unit Perhubungan dan Pendaftaran, Jabatan Pelajaran Perak setelah selesai kajian dijalankan.

4. Kehadiran tuan/puan membuat kajian di sekolah berkenaan tidak seharusnya menjejaskan proses pengajaran dan pembelajaran di sekolah berkenaan.

Sekian, terima kasih.

**“BERKHIDMAT UNTUK NEGARA”**

Saya yang menurut perintah,

  
**(EN.ISMAIL BIN IBRAHIM)**  
Penolong Pengarah,  
Unit Perhubungan dan Pendaftaran  
Jabatan Pelajaran Negeri Perak  
b.p. Pengarah Pelajaran Negeri Perak.

Sk. - Pengarah Pelajaran Negeri Perak

Khazupp10

**“CINTAILAH BAHASA KITA”**  
(Sila catatkan rujukan pejabat ini apabila berhubung)



**JABATAN PELAJARAN NEGERI SABAH**

SEKTOR PENGURUSAN SEKOLAH  
TINGKAT 1, BLOK C, BANGUNAN KWSP  
88000 KOTA KINABALU

Pejabat Pengarah : 088-252224, Pejabat Am (SPS) 088-251720 / 251721,  
Faks : 088-224585



Rujukan: JP (SB)/700/7/03 Jld. 17 (24)

Tarikh : 25.05.2010

Tan Shyh Mee  
d/a Dr Dijit Singh  
Fakulti Sains Komputer dan Teknologi Maklumat  
Universiti Malaya  
50603 Kuala Lumpur

Tuan/Puan,

**KELULUSAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH, INSTITUT PERGURUAN, JABATAN PELAJARAN NEGERI  
DAN BAHAGIAN-BAHAGIAN DI BAWAH KEMENTERIAN PELAJARAN MALAYSIA**

Dengan segala hormatnya, saya diarah merujuk surat tuan mengenai perkara di atas

2. Sukacita dimaklumkan bahawa Jabatan Pelajaran Negeri Sabah tiada halangan bagi pihak tuan menjalankan kajian "*An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers*" seperti dalam surat Kementerian Pelajaran Malaysia. Walau bagaimanapun tertakluk kepada syarat-syarat berikut:

- 2.1 Berhubung dan berbincang dengan pentadbir sekolah tentang pelaksanaan/ perjalanan kajian tersebut.
- 2.2 Penyertaan warga pendidik dan murid-murid dalam kajian adalah sukarela.
- 2.3 Proses pengajaran dan pembelajaran atau pelaksanaan aktiviti sekolah tidak terganggu atau terjejas semasa kajian dijalankan.
- 2.4 Tuan tidak dibenarkan menjalankan aktiviti di kelas-kelas peperiksaan awam sekolah.
- 2.5 Sebarang data / maklumat serta dapatan kajian hanyalah untuk memenuhi syarat-syarat kursus pengajian sahaja

Sekian, terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah

**MADAILE HAJI BASRI**  
Penolong Pendaftar Institusi Pendidikan  
b.p. Pendaftar Institusi Pendidikan dan Guru  
Jabatan Pelajaran Negeri Sabah

s.k. 1. Pendaftar Institusi Pendidikan dan Guru  
Jabatan Pelajaran Negeri Sabah

RJ/kk  
J1612  
250510

(Sila catatkan nombor rujukan apabila berurusan dengan kami)

**JANGAN TERJERUMUS KE DALAM PERANGKAP DADAH**

Web: [www.moe.gov.my/jpnSabah](http://www.moe.gov.my/jpnSabah)





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TUANKU HAJI BUJANG  
JALAN SIMPANG TIGA  
93604 KUCHING  
SARAWAK

Telefon: 082-243201  
FAX: 082-246750  
Kawat : PENDIDIKAN

Ruj Kami : JPS(W)/SPPP/(Lat)153/08/02/05/Jld. 32 ( 34 )

Tarikh : 20 MAY 2010

**Tan Shyh Mee**

42 Jalan KP 3/2 Taman Kajang Prime  
43000 Kajang  
Selangor

Tuan/puan

**KEBENARAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH, INSTITUT-  
INSTITUT PERGURUAN, JABATAN-JABATAN PELAJARAN DAN BAHAGIAN-  
BAHAGIAN DI BAWAH KEMENTERIAN PELAJARAN MALAYSIA**

Dengan hormatnya saya diarah merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa pada dasarnya Jabatan Pelajaran Negeri Sarawak tiada sebarang halangan untuk membenarkan tuan menjalankan kajian bertajuk :

**" An Assessment Of information Literacy Competencies Among Secondary School  
Library media Teachers "**

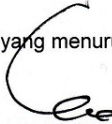
3. Sukacita diingatkan bahawa sepanjang tempoh kajian tersebut, tuan adalah tertakluk kepada peraturan yang sedang berkuatkuasa dan menjalankan kajian seperti tajuk yang diluluskan oleh Bahagian Perancangan dan Penyelidikan Dasar Pendidikan, Kementerian Pelajaran Malaysia bil. KP(BPPDP)603/5/JLD.4(167) bertarikh 21.04.2010.

4. Jabatan ini memohon agar sesalinan laporan kajian dihantar ke Unit Latihan Dan Kemajuan Staf, Jabatan Pelajaran Negeri Sarawak sebaik sahaja selesai untuk tujuan rekod dan rujukan. Dengan surat ini, Pegawai berkenaan adalah dimohon untuk memberi bantuan dan kerjasama yang sewajarnya bagi menjayakan kajian tersebut.

Sekian. Terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

  
[KUSWADY BIN CHIL]

Sektor Khidmat Pengurusan Dan Pembangunan  
b.p Pengarah Pelajaran  
Sarawak.



SEKTOR JAMINAN KUALITI  
JABATAN PELAJARAN PAHANG  
BANDAR INDERA MAHKOTA  
25604 KUANTAN

Tel : 09-5715700  
Fax : 09-5734857  
Email : [jpn.pahang@pah.moe.gov.my](mailto:jpn.pahang@pah.moe.gov.my)  
Lweb : <http://www.moe.gov.my/jpnpahang>

Ruj. Kami : JPNP 17/01/001/Jld.33(111)  
Tarikh : 25 Mei 2010  
11 Jamadilakhir 1431H

Puan Tan Shyh Mee  
42 Jln KP 3/2 Tmn Kajang Prima  
43000 Kajang  
Selangor

IC : 680623065014

Tuan,

**KEBENARAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH DI BAWAH JABATAN  
PELAJARAN NEGERI PAHANG**

Adalah saya dengan hormatnya diarah memaklumkan bahawa permohonan tuan untuk menjalankan kajian bertajuk:

**"An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers"** diluluskan.

2. Kelulusan ini adalah berdasarkan kepada instrumen kajian dan senarai sampel yang di kemukakan ke Jabatan ini. Sila tuan kemukakan ke Jabatan ini senaskah laporan akhir kajian setelah selesai kelak.

3. Adalah perlu diingatkan bahawa pelajar yang dijadikan sampel kajian tidak boleh melibatkan pelajar-pelajar dalam tahun peperiksaan UPSR, PMR, SPM dan STPM.

Sekian, terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

  
**AHMAD SHARIFUDDIN BIN ABU HASAN**  
b.p Pengarah Pelajaran Pahang

sk

1. Pengarah Pelajaran Pahang
2. Fail



Kami Mengamalkan Sistem Pengurusan Kualiti MS ISO 9001:2008



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JABATAN PELAJARAN NEGERI KEDAH DARUL AMAN  
KOMPLEKS PENDIDIKAN, JALAN STADIUM  
05604 ALOR SETAR  
KEDAH DARUL AMAN  
TELEFON - A.S. 04 733 1311 NO. FAX :

Ruj Tuan:

Ruj Kami : JPK03-07/3212(37) 2

Tarikh : 27 Mei 2010

13 Jamadil Akhir 1431

Tan Shyh Mee  
Pelajar Pasca Siswazah  
d/a Dr Diljit Singh  
Fakulti Sains Komputer dan Teknologi Maklumat  
Universiti Malaya  
50603 KUALA LUMPUR

Tuan/Puan,

**Kebenaran Untuk Menjalankan Kajian/Soal Selidik di Jabatan Pelajaran Negeri /  
Pejabat Pelajaran Daerah dan Sekolah – Sekolah di Negeri Kedah Darulaman**

Saya dengan hormatnya diarah merujuk kepada perkara tersebut di atas.

2. Dimaklumkan bahawa permohonan tuan/puan untuk menjalankan kajian / soal selidik di sekolah-sekolah di Negeri Kedah bertajuk “ *an assessment of information literacy competencies among secondary school library media teachers* “ telah di luluskan.
3. Kelulusan ini adalah berdasarkan kepada apa yang terkandung di dalam cadangan penyelidikan yang tuan/puan kemukakan ke Kementerian Pelajaran Malaysia. Tuan/Puan dikehendaki mengemukakan senaskah laporan akhir kajian setelah selesai kelak dan diingatkan supaya mendapat kebenaran terlebih dahulu daripada Jabatan ini sekiranya sebahagian atau sepenuhnya dapatan kajian tersebut hendak dibentangkan di mana-mana forum, seminar atau diumumkan kepada media.
4. Kebenaran ini adalah tertakluk kepada persetujuan Pengetua/Guru Besar sekolah berkenaan dan adalah sah sehingga 31 Disember 2010.

Sekian, terima kasih.

“ BERKHIDMAT UNTUK NEGARA “  
“ PENDIDIKAN CEMERLANG KEDAH TERBILANG “

Saya yang menurut perintah,

( ROZAINI BIN AHMAD BCK )  
Penolong Pengarah Kanan  
Unit Perhubungan dan Pendaftaran  
Sektor Pengurusan Sekolah,  
b.p. Pengarah Pelajaran Negeri Kedah Darul Aman.

.ina/ppps/kajian2010/87



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**JABATAN PELAJARAN PULAU PINANG**

**JALAN BUKIT GAMBIR**

**11700 PULAU PINANG**

**Tel : 04-657 5500, Faks : 04-658 2500**

**<http://jpnpp.edu.my>**



**"1 MALAYSIA : RAKYAT DIDAHULUKAN PENCAPAIAN DIUTAMAKAN."**

Ruj Tuan :

Ruj Kami : JPNPP(PER) 100-9/4 ( 51)

Tarikh : 17 Mei 2010

Tan Shyh Mee  
42, Jalan KP 3/2  
Taman Kajang Prima Kajang  
43000 Kajang  
Selangor

Tuan/Puan,

**KELULUSAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH, INSTITUT  
PERGURUAN, JABATAN PELAJARAN NEGERI DAN BAHAGIAN – BAHAGIAN DI  
BAWAH KEMENTERIAN PELAJARAN MALAYSIA**

Dengan hormatnya saya diarah merujuk perkara tersebut di atas.

2. Surat kelulusan menjalankan kajian dari Bahagian Perancangan Dan Penyelidikan Dasar Pendidikan, Kementerian Pelajaran Malaysia Bil.KP(BPPDP) 603/5/Jld 4 (167) bertarikh 21 April 2010 adalah dirujuk.

3. Adalah dimaklumkan bahawa pihak Jabatan Pelajaran Pulau Pinang, tiada halangan untuk Tuan/Puan menjalankan penyelidikan di sekolah-sekolah negeri Pulau Pinang yang bertajuk:

*"An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers".*

4. Walau bagaimanapun Tuan/Puan adalah tertakluk kepada syarat-syarat seperti berikut:

- 4.1 Mendapat kebenaran dari Pengetua/Guru Besar sekolah berkenaan.
- 4.2 Tidak mengganggu perjalanan, peraturan dan disiplin sekolah.
- 4.3 Segala maklumat yang dikumpul adalah untuk tujuan akademik sahaja.
- 4.4 Menghantar satu salinan laporan kajian ke Jabatan ini setelah selesai kajian.
- 4.5 Sila kemukakan surat ini apabila berurusan dengan pihak sekolah.
- 4.6 Surat ini berkuatkuasa sehingga **31 Disember 2010**.

Sekian, terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

**( IBRAHIM BIN YACUB )**

Penolong Pendaftar Sekolah  
Jabatan Pelajaran Pulau Pinang  
b.p Ketua Pendaftar Sekolah dan Guru  
Kementerian Pelajaran Malaysia





جَابَتَانْ پَلَاڠَارَانْ نَغَرِي تَرَنْڠْڠَانُو

JABATAN PELAJARAN NEGERI TERENGGANU,  
JALAN BUKIT KECIL,  
20604 KUALA TERENGGANU.

Pejabat Am : 09-6213000, 09-6213001  
Fax : 09-6238415  
Fax Akademik : 09-6234335

Rujukan Kami : P.T. 06030-15 (71)

Tarikh : 18 Mei 2010



Tan Shyh Mee,  
Pelajar Pasca Siswazah,  
D/a Dr. Diljit Singh,  
Fakulti Sains Komputer dan Teknologi Maklumat,  
Universiti Malaya,  
50603 Kuala Lumpur.

Tuan,

**MEMOHON KEBENARAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH**

Dengan segala hormatnya surat tuan bertarikh 07 Mei 2010 mengenai perkara di atas adalah di rujuk.

2. Sehubungan itu, sukacita dimaklumkan bahawa jabatan ini tiada apa-apa halangan kepada pihak tuan untuk menjalani penyelidikan / kajian di Sekolah-sekolah Menengah di Negeri Terengganu di bawah Jabatan Pelajaran Negeri Terengganu sebagaimana yang dicadangkan bertajuk :-

**" An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers "**

4. Walau bagaimanapun tuan diminta mengadakan perbincangan dengan pihak pengurusan sekolah berkenaan terlebih dahulu agar proses pengajaran dan pembelajaran tidak terganggu.

5. Sukacita kiranya tuan dapat kirimkan ke Jabatan ini satu salinan hasil kajian apabila selesai kelak.

Sekian, terima kasih.

**" BERKHIDMAT UNTUK NEGARA "**

**" BERSAMA MELONJAKKAN PRESTASI PENDIDIKAN "**

Saya yang menurut perintah,

(HAJAH NOREHAN BINTI SULONG)  
Penolong Pengarah  
Unit Perhubungan dan Pendaftaran  
b.p. Pengarah Pelajaran Negeri Terengganu  
Jabatan Pelajaran Negeri Terengganu

PERMOK/MIANDISEK/ftaz/2010....

(Sila catatkan rujukan Jabatan ini apabila berhubung)



JABATAN PELAJARAN JOHOR,  
JALAN TUN ABDUL RAZAK,  
80604 JOHOR BAHRU,  
JOHOR DARUL TA'ZIM

Telefon:  
Pengarah : 07-2361787  
Pejabat Am : 07-2361633  
: 07-2332200  
No. Fax : 07-2385789  
: 07-2378319  
Peperiksaan : 07-2361979  
No. Fax : 07-2369084  
e\_mail : jpnjohor@joh.moe.gov.my.

Rujukan Kami : JPNJ/31/1128/Jld.04 (86)  
Tarikh : 27 Mei 2010

Tan Shyh Mee  
42, Jalan KP 3/2  
Taman Prima Kajang  
43000 Kajang

Tuan,

**Kebenaran Untuk Menjalankan Kajian Di Sekolah-Sekolah, Institut Perguruan, Jabatan Pelajaran Negeri Dan Bahagian-Bahagian Di Bawah Kementerian Pelajaran Malaysia.**

Dengan hormatnya surat daripada KPM Bil: KP(BPPDP)603/5/Jld.4(167) bertarikh 21 April 2010 berkaitan permohonan adalah di rujuk.

2. Sukacita dimaklumkan bahawa Jabatan ini tiada apa-apa halangan bagi membenarkan tuan menjalankan kajian ke sekolah-sekolah **Kerajaan dan Swasta Negeri Johor** bertajuk:

**" An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers "**

3. Sehubungan dengan itu, tuan boleh berhubung terus dengan Pengetua / Guru Besar sekolah berkenaan bagi mendapatkan maklumat dan tindakan selanjutnya.
4. Sila bawa surat ini semasa membuat kajian.

Sekian, terima kasih.

**" BERKHIDMAT UNTUK NEGARA "**

Saya yang menurut perintah,

( MOHD. HASSIM BIN SUDIMAN )  
Penolong Pendaftar Institusi Pendidikan Dan Guru  
Jabatan Pelajaran Negeri Johor  
b.p. Ketua Pendaftar Institusi Pendidikan dan Guru  
Kementerian Pelajaran Malaysia

Zul/Surat Kelulusan/09

Sijil Pendaftaran  
No. PA 0059  
Sistem Kualiti MS ISO 9000  
Perkhidmatan Awam Malaysia



Malaysian Public Service  
MS ISO 9000 Quality System  
Registration Certificate  
No. PA 0059



JABATAN PELAJARAN MELAKA  
JALAN ISTANA,  
PETI SURAT No. 62,  
75450 MELAKA

Pengarah : 06-2323782  
Timbalan : 06-2323781  
Pejabat Am : 06-2323777  
06-2323778  
06-2323779  
Peperiksaan : 06-2323780  
Fax : 06-2320500

JPM.SPS.UPP.100 -2/5/2 Jld 4( )

Tarikh : 31 Mei 2010

Tan Shyh Mee,  
Pelajar Pasca Siswazah,  
d/a Dr.Diljit Singh,  
Fakulti Sains Komputer dan Teknologi Maklumat,  
Universiti Malaya,  
50603 Kuala Lumpur.

Tuan,

**KEBENARAN MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH MENENGAH NEGERI  
MELAKA**

Adalah saya diarah merujuk surat tuan, mengenai perkara di atas.

2. Sukacita dimaklumkan bahawa Jabatan ini tiada halangan bagi pihak tuan untuk menjalankan aktiviti seperti yang dinyatakan. Walau bagaimanapun, pihak tuan adalah dinasihatkan menghubungi Pengetua sekolah berkenaan terlebih dahulu untuk berbincang dan mendapatkan persetujuan.

3. Sebarang pertanyaan, sila hubungi Hj Shahidin bin Mohd Shah di talian 06-2325530 atau 019-6262312. Sekian untuk makluman tuan. Terima kasih.

**'1MALAYSIA, MELAKA MAJU 2010'  
"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

**(HJ ASHA'ARI BIN JOHARI)**  
Ketua Sektor Pengurusan Sekolah  
b.p Pengarah Pelajaran Melaka

sk.  
i. Fail Penyelaras

(Sila catatkan rujukan Jabatan ini bila berhubung)



**PEJABAT PELAJARAN WILAYAH PERSEKUTUAN PUTRAJAYA**  
**PUTRAJAYA FEDERAL TERRITORY EDUCATION OFFICE**  
Jalan P16, Presint 16, 62150 Wilayah Persekutuan Putrajaya  
Tel: 03-8888 8922 03-8890 3069 03-8890 3070  
Fax: 03-8890 3085



Rujukan Kami : KPM.PPWPP.620-1/5 Jld.12(46)  
Tarikh : 17 Mei 2010

Tan Shyh Mee,  
Pelajar Pasca Siswazah,  
D/A Dr. Diljit Singh,  
Fakulti Sains Komputer dan Teknologi Maklumat,  
Universiti Malaya,  
50603 Kuala Lumpur.

Tuan,

**KEBENARAN MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH, INSTITUT PERGURUAN,  
JABATAN PELAJARAN NEGERI DAN BAHAGIAN-BAHAGIAN DI BAWAH  
KEMENTERIAN PELAJARAN MALAYSIA**

Dengan hormatnya perkara di atas dirujuk dan surat tuan bertarikh 10 Mei 2010 adalah berkaitan.

2. Sukacita dimaklumkan bahawa pihak Pejabat Pelajaran Wilayah Persekutuan Putrajaya tiada halangan dan mengizinkan pihak tuan menjalankan kajian di sekolah-sekolah Wilayah Persekutuan Putrajaya yang bertajuk **"An Assessment Of Information Literacy Competencies Among Secondary School Library Media Teachers"**.

3. Sehubungan itu, pihak tuan dikehendaki menghubungi Pengetua dan Guru Besar sebelum memasuki sekolah dan mematuhi syarat-syarat yang terkandung dalam surat Bahagian Perancangan dan Penyelidikan Dasar Pendidikan KP(BPPDP)603/5/JLD.4(167) bertarikh 21 April 2010.

4. Pihak tuan dimohon mengemukakan senaskah laporan akhir kajian setelah selesai untuk simpanan pejabat ini. Kebenaran ini hanya untuk tujuan yang dipohon dan luput selepas tarikh **31 Disember 2010**.

Sekian, terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

Saya yang menurut perintah,

**(HAJI KHAIRIL BIN AWANG)**  
Timbalan Pengarah Pelajaran  
Pejabat Pelajaran Wilayah Persekutuan Putrajaya

s.k. 1. Fail timbul.





Rujukan Tuan :  
Rujukan Kami : JPNS/SPS/PPN/A25090/06/25/JLD 60/ ( 90 )  
Tarikh : 14/05/2010

PUAN TAN SHYH MEE,  
42 JLN KP 3/2 TMN KAJANG PRIMA,  
43000 KAJANG,  
SELANGOR DARUL EHSAN.

Tuan,

**AN ASSESSMENT OF INFORMATION LITERACY COMPETENCIES AMONG  
SECONDARY SCHOOL LIBRARY MEDIA TEACHERS**

Dengan segala hormatnya perkara di atas dirujuk.

2. Jabatan ini tiada halangan untuk pihak tuan menjalankan kajian / penyelidikan tersebut di sekolah-sekolah dalam Negeri Selangor seperti yang dinyatakan dalam surat permohonan.
3. Pihak tuan diingatkan agar mendapat persetujuan daripada Pengetua / Guru Besar supaya beliau dapat bekerjasama dan seterusnya memastikan bahawa penyelidikan dijalankan hanya bertujuan seperti yang dipohon. Kajian / Penyelidikan yang dijalankan juga tidak mengganggu perjalanan sekolah serta tiada sebarang unsur paksaan.
4. Tuan juga diminta menghantar senaskah hasil kajian ke Unit Perhubungan & Pendaftaran Jabatan Pelajaran Selangor sebaik selesai penyelidikan / kajian.

Sekian, terima kasih.

**"BERKHIDMAT UNTUK NEGARA"**

**"KEJUJURAN DAN KETEKUNAN"**

Saya yang menurut perintah,

( MOHD SALLEH BIN MOHD KASSIM )  
Penolong Pendaftar,  
b.p. Pendaftar Sekolah Dan Guru,  
Jabatan Pelajaran Selangor.

s.k. 1. Fail



(Sila catatkan nombor rujukan apabila berurusan dengan kami)  
**JABATAN PELAJARAN SELANGOR -  
TERBILANG**

No. Telefon:  
03 - 5518 6208  
No. Faksimili:  
03 - 55129704  
Email:  
jpnsl@moe.gov.my  
hotline@jpnsl.moe.gov.my  
Laman Web:  
www.moe.gov.my/jpnsl



جائت قلجربن نكزري سميلن دامرا الحصوص

**JABATAN PELAJARAN NEGERI  
NEGERI SEMBILAN DARUL KHUSUS**

JALAN DATO' HAMZAH KARUNG BERKUNCI No. 6  
70990 SEREMBAN, NEGERI SEMBILAN DARUL KHUSUS  
Tel : 06-7653100 Fax : 06-7639969



JPNS/SPS(PP)/2/4/2/1/( )

19 Mei 2010

Tan Shyh Mee  
Pelajar Pasca Siswazah  
D/a Dr. Diljit Singh  
Fakulti Sains Komputer dan Teknologi Maklumat  
Universiti Malaya  
50603 Kuala Lumpur

Tuan/Puan,

**Kebenaran Menjalankan Kajian Ke Sekolah-Sekolah Di Negeri  
Sembilan Darul Khusus Di Bawah Kementerian Pelajaran Malaysia**

Saya dengan hormatnya di arah memaklumkan bahawa permohonan tuan/puan untuk menjalankan kajian bertajuk:-

**"An Assessment of Information Literacy Competencies Among Secondary  
School Library Media Teachers"**

telah diluluskan

2. Tuan/Puan hendaklah berjumpa terus dengan Pengetua atau Guru Besar sekolah berkenaan untuk meminta persetujuan dan membincangkan kajian tersebut seperti berikut:

**1) SEKOLAH-SEKOLAH MENENGAH DI NEGERI SEMBILAN**

3. Dimaklumkan bahawa kebenaran ini diberi berdasarkan surat kelulusan dari pihak Kementerian Pelajaran Malaysia, Bahagian Perancangan Dan Penyelidikan Dasar Pelajaran, nombor rujukan KP(BPPDP)603/5/JLD4(167) bertarikh 21 April 2010.

....2/


4. Tuan/Puan hendaklah menghantar satu naskah hasil kajian ke Jabatan Pelajaran Negeri Sembilan (u.p: Unit Perhubungan, Pendaftaran & Pelajaran Swasta).

Sekian untuk makluman dan tindakan tuan/puan selanjutnya.

Terima kasih.

**“BERKHIDMAT UNTUK NEGARA”**

Saya yang menurut perintah,

  
**HAJI JAMALI BIN SALAM**  
b.p. Pengarah Pelajaran  
Negeri Sembilan Darul Khusus

Nota: -Sila beri satu salinan surat kelulusan semasa membuat kajian di sekolah.

AK/KAJIAN

Tan Shyh Mee,  
Pelajar Pasca Siswazah,  
D/a Dr. Diljit Singh,  
Fakulti Sains Komputer dan Teknologi Maklumat,  
Universiti Malaya,  
50603 Kuala Lumpur.  
Tel: 603-8737 5359  
HP: 6016-3920 453  
E-mail: shyhmee@siswa.um.edu.my

Rujukan : UM/PhD/GPM MY/10/05  
Tarikh : hb. April 2010

Pengarah,  
Bahagian Teknologi Pendidikan,  
Kementerian Pelajaran Malaysia,  
Pesiaran Bukit Kiara,  
50604 Kuala Lumpur,  
(UP: Sektor Pengurusan Sumber Pendidikan)

T. Bhg. Datin,

**KAJIAN KEMAHIRAN LITERASI MAKLUMAT DALAM KALANGAN GURU PERPUSTAKAAN  
DAN MEDIA SEKOLAH MENENGAH.**

Dengan segala hormatnya, perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa saya, Tan Shyh Mee, pelajar pasca siswazah peringkat Falsafah Kedoktoran di dalam bidang Sains Maklumat (Sain Perpustakaan dan Maklumat) di Universiti Malaya, sedang menjalankan kajian lapangan dan mengutip data bagi memenuhi syarat sebagai Ijazah Doktor Falsafah dalam bidang Sains Maklumat.

3. Bidang kajian saya ialah literasi maklumat dan saya ingin menyelidik pengetahuan serta pemahaman Guru Perpustakaan dan Media (GPM) berkaitan literasi maklumat. Kajian ini juga merangkumi persoalan pelaksanaan literasi maklumat di sekolah-sekolah.

4. Saya memohon jasa baik Y. Bhg. Datin untuk membantu saya dalam proses mengutip data kajian saya seperti dalam lampiran yang disertakan. Bersama ini dilampirkan instrumen yang perlu dijawab oleh GPM (Malaysia = 656 orang).

5. Sokongan dan tindakan Y. Bhg. Datin didahului ucapan penghargaan dan terima kasih.

Sekian,

Yang benar,

.....  
Tan Shyh Mee



Tan Shyh Mee,  
Pelajar Pasca Siswazah,  
D/a Dr. Diljit Singh,  
Fakulti Sains Komputer dan Teknologi Maklumat,  
Universiti Malaya,  
50603 Kuala Lumpur.  
Tel: 603-8737 5359  
HP: 6016-3920 453  
E-mail: shyhmee@siswa.um.edu.my

Rujukan : UM/PhD/GPM MY/10/06  
Tarikh : XX hb. April 2010

Ketua Penolong Pengarah,  
Bahagian Teknologi Pendidikan Negeri Perak,  
Jalan Tawas Baru Utara,  
Tasik Damai,  
30200 Ipoh, Perak.  
(UP: Encik Md. Isa b. Md. Amin)

Tuan,

**KAJIAN KEMAHIRAN LITERASI MAKLUMAT DALAM KALANGAN GURU PERPUSTAKAAN  
DAN MEDIA SEKOLAH MENENGAH.**

Dengan segala hormatnya, perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa saya, Tan Shyh Mee, pelajar pasca siswazah peringkat Falsafah Kedoktoran di dalam bidang Sains Maklumat (Sain Perpustakaan dan Maklumat) di Universiti Malaya, sedang menjalankan kajian lapangan dan mengutip data bagi memenuhi syarat sebagai Ijazah Doktor Falsafah dalam bidang Sains Maklumat.

3. Bidang kajian saya ialah literasi maklumat dan saya ingin menyelidik pengetahuan serta pemahaman Guru Perpustakaan dan Media (GPM) berkaitan literasi maklumat. Kajian ini juga merangkumi persoalan pelaksanaan literasi maklumat di sekolah-sekolah menengah.

4. Saya memohon jasa baik tuan untuk membantu saya dalam proses mengutip data kajian saya seperti dalam lampiran yang disertakan . Bersama ini dilampirkan instrumen yang perlu dijawab oleh GPM (Perak : 71 orang).

5. Sokongan dan kerjasama dan tindakan tuan didahului ucapan penghargaan dan terima kasih.

Sekian,

Yang benar,

.....  
Tan Shyh Mee

s.k.  
Pengarah,  
Bahagian Teknologi Pendidikan,  
Kementerian Pelajaran Malaysia,  
Pesiaran Bukit Kiara,  
50604 Kuala Lumpur,  
(UP: Sektor Pengurusan Sumber Pendidikan)

**Non-random sampling**

Total Secondary schools =2189/ 2009 (Malaysia, 2009)

5% error	95% confidence	Need 327 samples
Need 327 replies	50% responds replies	654 sent out

**Quota Sampling**

Number of secondary schools by state						
	States	No. of Schools-- N	M	No. Samples to send	No. survey need to sent out	No. survey need to sent out for each states
1	Perak	236	0.1078	35.25	70.5	71
2	Selangor	256	0.1169	38.22	76.44	76
3	Pahang	180	0.0822	26.87	53.74	54
4	Kelantan	135	0.0616	20.14	40.28	40
5	Johor	240	0.1096	35.83	71.66	72
6	Kedah	173	0.079	25.83	51.66	52
7	WP Labuan	9	0.0041	1.34	2.68	3
8	Melaka	73	0.0333	10.88	21.76	22
9	Negeri Sembilan	116	0.0529	17.29	34.58	35
10	Pulau Pinang	123	0.0561	18.34	36.68	37
11	Perlis	26	0.0118	3.85	7.7	8
12	Terengganu	135	0.0616	20.14	40.28	40
13	WP KL	94	0.0429	14.02	28.04	28
14	Sabah	207	0.0945	30.9	61.8	62
15	Sarawak	177	0.0808	26.42	52.84	53
16	WP PTJY	9	0.0041	1.34	2.68	3
	Total	2189		326.66	653.32	656
			$N1 \div 2189 = M$	$S \times M \rightarrow 327 \times 0.1078$	$326.66 \times 2 = 653.32$	
			$S = 327$			

***How do you view information literacy in school?  
Do you need information literacy as a school librarian?***

**Questionnaire Instructions**

Dear Sir / Madam,

How do you view information literacy in schools? I am a PhD candidate at the Faculty of Computer Science and Information Technology, University Malaya, and I am currently conducting a study on Information Literacy for School Librarians. You have been selected as a respondent to answer the questionnaire. By responding to the enclosed questionnaire, you will provide important information about the need for information literacy competencies and your perception of the role of information literacy in the Malaysian education curriculum. School library and information literacy experts have reviewed and validated this questionnaire.

Please be assured that all of your responses will remain confidential and are solely used for academic research only. If you have any questions about the questionnaire, please contact me Ms Shyh Mee Tan (HP: 016-3920453 or email to [shyhmee@siswa.um.edu.my](mailto:shyhmee@siswa.um.edu.my)). Please return the completed questionnaire to the respective officers who administer this survey or mail it directly to:

Ms Shyh Mee Tan  
c/o Dr. Diljit Singh  
Fakulti Sains Komputer dan Teknologi Maklumat  
Universiti Malaya  
50603 Kuala Lumpur

Thank you very much for your participation in providing complete and accurate information for this study. I appreciate your effort and time to answer this questionnaire.

A. **Background.** Please fill in the blanks or tick ( ✓ ) whichever is applicable.

**Latar belakang.** Sila tandakan ( ✓ ) di ruangan yang dipilih.

1. Where is your school located?

*Lokasi sekolah anda?*

a. State:

*Negeri:*

- |                                     |  |  |
|-------------------------------------|--|--|
| <input type="checkbox"/> 1 Perak    | <input type="checkbox"/> 6 Kedah           | <input type="checkbox"/> 11 Perlis     |
| <input type="checkbox"/> 2 Selangor | <input type="checkbox"/> 7 WP Labuan       | <input type="checkbox"/> 12 Terengganu |
| <input type="checkbox"/> 3 Pahang   | <input type="checkbox"/> 8 Melaka          | <input type="checkbox"/> 13 WP KL      |
| <input type="checkbox"/> 4 Kelantan | <input type="checkbox"/> 9 Negeri Sembilan | <input type="checkbox"/> 14 Sabah      |
| <input type="checkbox"/> 5 Johor    | <input type="checkbox"/> 10 Pulau Pinang   | <input type="checkbox"/> 15 Sarawak    |
|                                     |  | <input type="checkbox"/> 16 WP PTJY    |

b. District: (Please specify)

*Daerah: (Sila nyatakan)*

2. Which area is your school located in?

*Lokasi kawasan sekolah anda?*

- ☐ a. Urban area  
*Kawasan bandar*
- ☐ b. Rural area  
*Kawasan luar bandar*

3. Do these facilities exist in your school? (Please check all that apply)  
*Adakah sekolah anda mempunyai kemudahan seperti disenaraikan? (Sila tandakan yang berkenaan)*
- ☐ a. 24 hour electricity  
*Kemudahan elektrik 24 jam*
- ☐ b. Computer facilities  
*Kemudahan komputer*
- ☐ c. Internet facilities  
*Kemudahan internet*
4. How many years of teaching experience do you have? (Please specify):  
*Pengalaman anda sebagai guru? (Sila nyatakan):*
- Years  Months  
*Tahun Bulan*
5. How long have you been a library media teacher? (Please specify):  
*Pengalaman anda sebagai guru perpustakaan dan media? (Sila nyatakan):*
- Years  Months  
*Tahun Bulan*
6. What is your Resource Centre Management qualification? (Check **all the answers** that most resemble your background).  
*Apakah kelayakan dalam pengurusan pusat sumber sekolah? (Sila **tandakan semua jawapan** yang berkenaan sahaja).*
- ☐ Basic Resource Centre Management 35 hours Course  
*Kursus Asas Pengurusan Pusat Sumber Sekolah-35 Jam.*
- ☐ Advance Resource Centre Management 45 hours Course  
*Kursus Lanjutan Pengurusan Pusat Sumber Sekolah-45 Jam.*
- ☐ 14 weeks In-Service Resource Centre Management Course  
*Kursus dalam Perkhidmatan Pengurusan Pusat Sumber Sekolah 14 minggu.*
- ☐ One Year In-Service Resource Centre Management Course.  
*PSPK Sijil Khas: Pengurusan Pusat Sumber Sekolah Satu Tahun.*
- ☐ Diploma in Library and Information Science/ Educational Technology  
*Diploma Sains Perpustakaan dan Maklumat/ Teknologi Pendidikan.*
- ☐ Bachelors Degree in Library and Information Science/ Educational Technology.  
*Sarjana Muda Sains Perpustakaan dan Maklumat/ Teknologi Pendidikan.*
- ☐ Masters in Library and Information Science/ Educational Technology  
*Sarjana Sains Perpustakaan dan Maklumat/ Teknologi Pendidikan.*
- ☐ Doctorate in Library and Information Science/ Educational Technology  
*Doktor Falsafah Sains Perpustakaan dan Maklumat/ Teknologi Pendidikan.*
- ☐ None above.  
*Tiada di atas.*
- ☐ Others: (Please specify)  
*Lain-lain (Sila nyatakan): .....*

B I. **Perceptions of School Librarians about Information Literacy.** Please tick ( ✓ ) the applicable number.  
**Persepsi Guru Perpustakaan dan Media terhadap Literasi maklumat.** Sila tandakan ( ✓ ) pada nombor yang dipilih.

To what extent do you agree or disagree with these elements of information literacy? Please tick ( ✓ ) the number that best describes the extent of your opinion, ranging from **1** for **Strongly disagree** to **5** for **Strongly agree**.

Sejauhmanakah anda bersetuju atau tidak bersetuju dengan elemen literasi maklumat yang disenaraikan?  
 Sila tandakan ( ✓ ) pada nombor **1** untuk **Sangat tidak setuju** hingga **5** untuk **Sangat Bersetuju**.

Strongly disagree Sangat tidak setuju	Somewhat disagree Tidak setuju	Neutral Berkecuali	Somewhat agree Setuju	Strongly agree Sangat Bersetuju
①	②	③	④	⑤

- |     |   |                   |
|-----|---|-------------------|
| 7.  | Information literacy is a set of skills that can be learned.<br><i>Literasi maklumat adalah satu set kemahiran yang boleh dipelajari.</i>   | ①   ②   ③   ④   ⑤ |
| 8.  | Information literacy enables you to access, evaluate and use information from a variety of sources.<br><i>Literasi maklumat membolehkan anda untuk mengakses, menilai, dan menggunakan maklumat daripada pelbagai sumber.</i> | ①   ②   ③   ④   ⑤ |
| 9.  | The information-literate person recognizes accurately the information needed.<br><i>Seorang yang celik maklumat mengenal maklumat yang diperlukan dengan tepat.</i>   | ①   ②   ③   ④   ⑤ |
| 10. | The information-literate person recognizes the need for information.<br><i>Seorang yang celik maklumat mengenal perlunya maklumat.</i>  | ①   ②   ③   ④   ⑤ |
| 11. | The information-literate person formulates questions based on information needs.<br><i>Seorang yang celik maklumat merumuskan soalan berdasarkan keperluan maklumat.</i>  | ①   ②   ③   ④   ⑤ |
| 12. | The information-literate person identifies potential sources of information.<br><i>Seorang yang celik maklumat mengenalpasti potensi sumber maklumat.</i>   | ①   ②   ③   ④   ⑤ |
| 13. | The information literate person develops successful search strategies.<br><i>Seorang yang celik maklumat memperkembangkan strategi pencarian yang berjaya.</i>  | ①   ②   ③   ④   ⑤ |
| 14. | The information-literate person accesses sources of information through computer-based and other technologies.<br><i>Seorang yang celik maklumat memperoleh sumber maklumat berasaskan komputer dan teknologi lain.</i>       | ①   ②   ③   ④   ⑤ |
| 15. | The information-literate person organizes information for practical applications.<br><i>Seorang yang celik maklumat menguruskan maklumat untuk aplikasi secara praktikal.</i>   | ①   ②   ③   ④   ⑤ |
| 16. | The information-literate person integrates information found with existing knowledge.<br><i>Seorang yang celik maklumat mengintegrasikan maklumat yang didapati dengan ilmu yang sedia ada.</i>                               | ①   ②   ③   ④   ⑤ |
| 17. | The information-literate person uses information in critical thinking.<br><i>Seorang yang celik maklumat menggunakan maklumat dalam proses pemikiran kritikal.</i>  | ①   ②   ③   ④   ⑤ |
| 18. | The information-literate person uses information in problem solving.<br><i>Seorang yang celik maklumat menggunakan maklumat dalam proses penyelesaian masalah.</i>  | ①   ②   ③   ④   ⑤ |
| 19. | A skilled school librarian with information literacy expertise has knowledge of resources.<br><i>Guru perpustakaan dan media mempunyai kepakaran literasi maklumat berpengetahuan sumber maklumat.</i>                        | ①   ②   ③   ④   ⑤ |

20. School librarians train teachers during in-house training programmes to incorporate information literacy knowledge.  
*Guru perpustakaan dan media melatih guru dalam kursus dalaman untuk mengabungkanlinkan pengetahuan literasi maklumat.* ① ② ③ ④ ⑤
21. School librarians play a leadership role in educating students on the importance of information literacy skills.  
*Guru perpustakaan dan media berperanan sebagai pemimpin mendidik pelajar pentingnya kemahiran literasi maklumat.* ① ② ③ ④ ⑤
22. School librarians perform as information specialists.  
*Guru perpustakaan dan media patut berfungsi sebagai pakar maklumat.* ① ② ③ ④ ⑤
23. School librarians provide reference services in school resource centres.  
*Guru perpustakaan dan media patut menyediakan perkhidmatan rujukan di pusat sumber sekolah.* ① ② ③ ④ ⑤
24. School librarians view their role as supporting teachers and students.  
*Guru perpustakaan dan media memperlihatkan peranan mereka sebagai pemberi sokongan kepada pelajar dan guru.* ① ② ③ ④ ⑤
25. School librarians view their role as providing information.  
*Guru perpustakaan dan media memperlihatkan peranan mereka sebagai pembekal maklumat.* ① ② ③ ④ ⑤

**II. Self-Assessment of Information Literacy Competencies.** Please tick (✓) the applicable number.  
**Penilaian Kendiri Kompetensi Literasi Maklumat.** Sila tandakan (✓) pada nombor yang dipilih.

Please indicate the level of your information literacy abilities of the following skills. Please tick (✓) the number that best describe your abilities, ranging from **1** for **Do not know at all** to **5** for **Excellent**.

Sila catatkan tahap kemahiran literasi maklumat anda seperti disenaraikan. Sila tandakan (✓) pada nombor **1** untuk **Tidak Tahu langsung** hingga **5** untuk **Cemerlang**.

Do not know at all <i>Tidak Tahu langsung</i>	Poor <i>Lemah</i>	Average <i>Sederhana</i>	Good <i>Baik</i>	Excellent <i>Cemerlang</i>
①	②	③	④	⑤
26. Define the information task (define the information needed). <i>Mendefinisikan tugas yang diperlukan (mendefinisikan maklumat yang diperlukan)</i>	①	②	③	④ ⑤
27. Identify information needed (to solve the information problem). <i>Mengenalpasti maklumat yang diperlukan (untuk menyelesaikan masalah maklumat).</i>	①	②	③	④ ⑤
28. Determine all possible sources of information. <i>Menentukan semua sumber maklumat yang mungkin.</i>	①	②	③	④ ⑤
29. Select the best sources of information. <i>Memilih sumber maklumat yang terbaik.</i>	①	②	③	④ ⑤
30. Locate sources intellectually and physically. <i>Mencari sumber maklumat secara intelek dan fizikal.</i>	①	②	③	④ ⑤
31. Search for information using Booleans operators (AND, OR, NOT). <i>Mencari maklumat dengan menggunakan Boolean operator (AND, OR, NOT).</i>	①	②	③	④ ⑤
32. Search for information using the keyword search and alternative keyword search. <i>Mencari maklumat meggunakan pencarian kata kunci dan kata alternatif.</i>	①	②	③	④ ⑤

33. Find information within sources. ① ② ③ ④ ⑤  
*Mencari maklumat di dalam lingkungan sumber.*
34. Extract relevant information from information sources. ① ② ③ ④ ⑤  
*Mendapatkan maklumat yang relevan dari sumber maklumat.*
35. Synthesize information found in the sources. ① ② ③ ④ ⑤  
*Mengabungkan maklumat yang diperolehi dari sumber.*
36. Organize information from multiple sources. ① ② ③ ④ ⑤  
*Menguruskan maklumat dari pelbagai sumber.*
37. Present the information found. ① ② ③ ④ ⑤  
*Menyampaikan maklumat yang didapati.*
38. Judge the effectiveness of the information found to carry out the task. ① ② ③ ④ ⑤  
*Mengadili keberkesanan maklumat yang didapati untuk tugas.*
39. Judge the efficiency of the information process. ① ② ③ ④ ⑤  
*Mengadili kecekapan proses mencari maklumat.*

**C. Factors Affecting Implementation of Information Literacy.** Please tick (✓) the applicable number.

**Faktor Mempengaruhi Pelaksanaan Literasi Maklumat.** Sila tandakan (✓) pada nombor yang dipilih.

To what degree of importance are these aspects needed for the implementation of information literacy in schools?  
 Please tick (✓) the number that best describe your opinion on the importance of the factors, ranging from **1** for **Not important at all** to **5** for **Extremely important**

Sejauhmanakah pentingnya aspek yang disenaraikan perlu untuk melaksanakan literasi maklumat di sekolah.  
 Sila tandakan (✓) pada nombor **1** untuk **tidak penting langsung** hingga **5** untuk **Sangat penting**.

Not important at all <i>Tidak penting langsung</i>	Somewhat not important <i>Kurang penting</i>	No opinion either way <i>Tiada pendapat</i>	Somewhat important <i>Penting</i>	Extremely important <i>Sangat penting</i>
①	②	③	④	⑤

40. School librarians attend information literacy courses. ① ② ③ ④ ⑤  
*Guru perpustakaan dan media menghadiri kursus literasi maklumat.*
41. School librarians attend information literacy professional development. ① ② ③ ④ ⑤  
*Guru perpustakaan dan media menghadiri kursus perkembangan professional literasi maklumat*
42. School librarians learn information literacy instruction (pedagogy) on how to teach students. ① ② ③ ④ ⑤  
*Guru perpustakaan dan media mempelajari kaedah pengajaran literasi maklumat (pedagogi) untuk mengajar pelajar.*
43. School librarians collaborate with subject teachers to plan and teach information literacy in classroom. ① ② ③ ④ ⑤  
*Guru perpustakaan dan media bekerjasama dengan guru mata pelajaran untuk merancang dan mengajar literasi maklumat di dalam kelas.*
44. Implement information literacy in the education curriculum. ① ② ③ ④ ⑤  
*Laksanakan literasi maklumat ke dalam kurikulum pendidikan.*
45. Integrate information literacy into curriculum within subjects. ① ② ③ ④ ⑤  
*Integrasikan literasi maklumat ke dalam subjek dalam kurikulum.*



- |     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 46. | Teach information literacy as a separate subject within the school curriculum.<br><i>Mengajar literasi maklumat sebagai satu mata pelajaran di dalam kurikulum sekolah.</i>  | ① | ② | ③ | ④ | ⑤ |
| 47. | Teach information literacy as a set of library-based skills.<br><i>Mengajar literasi maklumat sebagai satu set kemahiran maklumat berasaskan perpustakaan.</i>   | ① | ② | ③ | ④ | ⑤ |
| 48. | Teach information literacy in the school resource centre.<br><i>Mengajar literasi maklumat sebagai satu mata pelajaran di pusat sumber sekolah.</i>  | ① | ② | ③ | ④ | ⑤ |
| 49. | Integrate information literacy into the Information and Communication Technology Literacy (ICTL) subject.<br><i>Mengintegrasikan literasi maklumat ke dalam mata pelajaran Literasi Teknologi Maklumat dan Komunikasi.</i> | ① | ② | ③ | ④ | ⑤ |
| 50. | A national information literacy agenda.<br><i>Agenda literasi maklumat kebangsaan.</i>   | ① | ② | ③ | ④ | ⑤ |
| 51. | An information literacy education policy for school librarians.<br><i>Polisi pendidikan literasi maklumat untuk guru perpustakaan dan media.</i>   | ① | ② | ③ | ④ | ⑤ |
| 52. | An information literacy education guideline for school librarians.<br><i>Garis panduan pendidikan literasi maklumat untuk guru perpustakaan dan media.</i>   | ① | ② | ③ | ④ | ⑤ |
| 53. | A National information literacy standard.<br><i>Piawaian literasi maklumat kebangsaan.</i>   | ① | ② | ③ | ④ | ⑤ |
| 54. | Information literacy standards for students.<br><i>Piawaian literasi maklumat untuk pelajar.</i>   | ① | ② | ③ | ④ | ⑤ |
| 55. | Library and Information Science certification for school librarians<br><i>Pensijilan Sains Perpustakaan dan Maklumat untuk Guru perpustakaan dan media.</i>  | ① | ② | ③ | ④ | ⑤ |
| 56. | School librarians attend information literacy training.<br><i>Guru perpustakaan dan media menghadiri latihan literasi maklumat.</i>  | ① | ② | ③ | ④ | ⑤ |
| 57. | A standardized information literacy training curriculum for school librarians<br><i>Kurikulum dan sukatan latihan literasi maklumat yang seragam untuk Guru Perpustakaan dan media.</i>                                    | ① | ② | ③ | ④ | ⑤ |
| 58. | Standardized information literacy training modules for school librarians.<br><i>Modul latihan literasi maklumat yang seragam untuk Guru perpustakaan dan media.</i>  | ① | ② | ③ | ④ | ⑤ |
| 59. | Continuing education opportunities in Library and Information Science for school librarians.<br><i>Peluang untuk melanjutkan pelajaran dalam bidang Sains Perpustakaan dan Maklumat untuk Guru perpustakaan dan media.</i> | ① | ② | ③ | ④ | ⑤ |
| 60. | Information technology facilities in schools.<br><i>Kemudahan teknologi maklumat di sekolah.</i>   | ① | ② | ③ | ④ | ⑤ |
| 61. | School libraries function as information centres.<br><i>Pusat sumber sekolah berfungsi sebagai pusat maklumat.</i>   | ① | ② | ③ | ④ | ⑤ |

**Comments**

62. In your opinion, what other aspects are needed for implementing information literacy in your school?  
*Pada pendapat anda, aspek apakah yang diperlukan lagi untuk melaksanakan literasi maklumat di sekolah anda?*

.....  
.....



Thank you for taking the time to complete this questionnaire. I appreciate your assistance in providing the information.

*Terima kasih kerana meluangkan masa untuk menjawab soal-selidik ini. Saya amat menghargai kerjasama anda.*

**End of survey / Tamat soal selidik**

THANK YOU  
*TERIMA KASIH*

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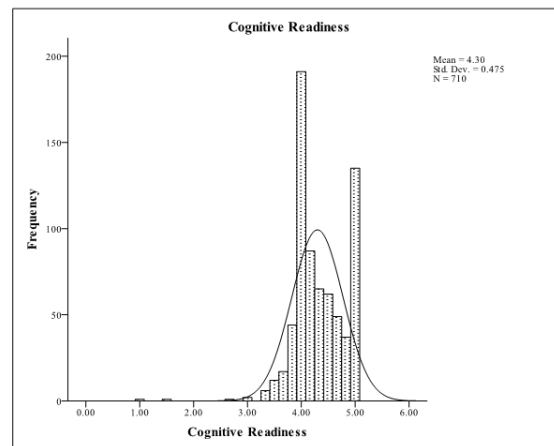


Figure 1

#### 1. i) Cognitive readiness

The frequency curve displayed a symmetric frequency shape with almost no skewness or kurtosis problem in the scores as in Figure 1. This indicated that the data in Cognitive readiness was normally distributed.

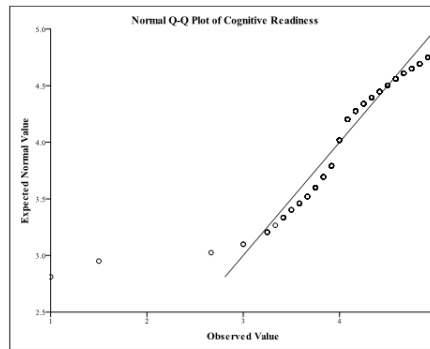


Figure 2

1. ii) The normal Q-Q plot shows the linearity except for the two variables in Figure 2.

This indicated that the data in Cognitive readiness has the linearity.

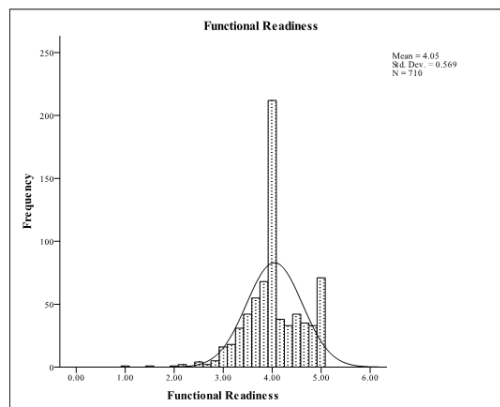


Figure 3: Perception of school librarians about their roles

## 2. i) Functional Readiness

The frequency curve displayed a symmetric frequency shape with almost no skewness or kurtosis problem in the scores as in Figure 3. This indicated that the data in the perception of school librarians about their roles was normally distributed.

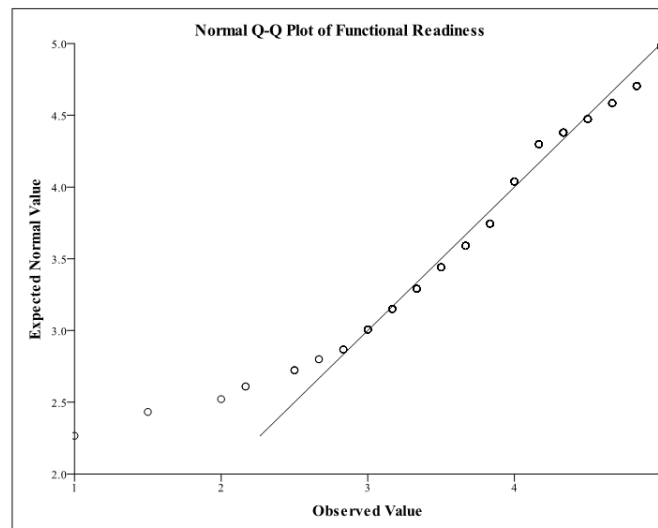


Figure 4: The linearity of school librarians' perceptions about their roles.

ii) The normal Q-Q plot shows linearity except for the two variables in Figure 4. This indicated that the data in the school librarians' perception about their roles has linearity.

iii

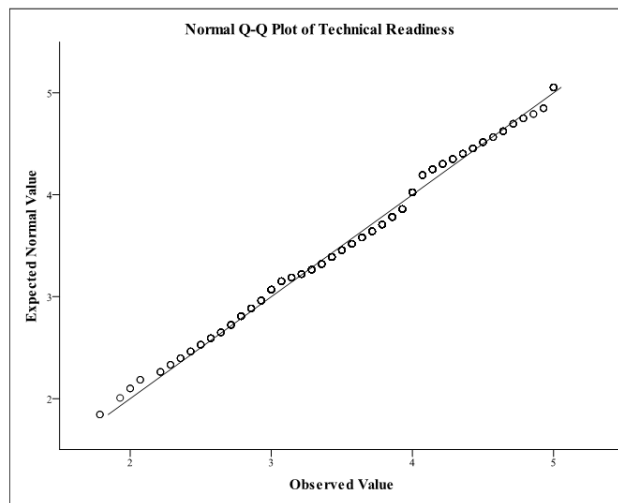


Figure 6: The linearity of school librarians' perceptions about their roles.

ii) The normal Q-Q plot shows linearity except for the five variables in Figure 6. This indicated that the data in the self-assessed IL skills among school librarians have linearity.

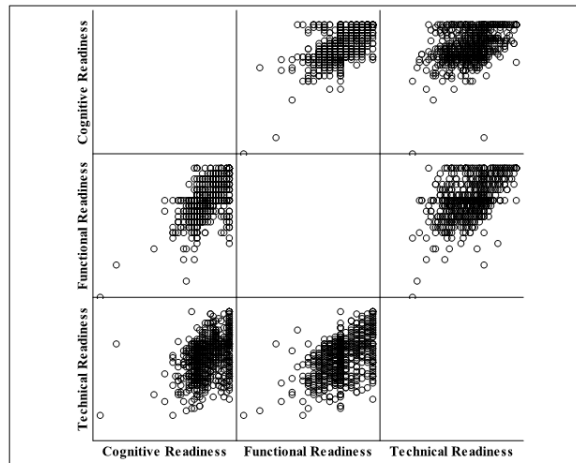


Figure 11: Scatterplot

#### 6. i) Scatterplot

The scatterplot is the graphical method that shows the normality and linearity of the multivariate data through observing its shape for the combined variables scores. If the scatterplots of the combined variables scores display the elliptical shapes, it indicates that the variables are in the normal and linear relationship as in Figure 11.

## Correlation Matrix : School Librarians' Readiness

Correlation Matrix																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
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## Factor Analysis 1: Communalities

		Initial	Extraction
Q7	Information literacy is a set of skills that can be learned.	1	0.453
Q8	Information literacy enables a person to access, evaluate, and use information from a variety of sources.	1	0.492
Q9	The information-literate person recognizes accurately the information needed.	1	0.572
Q10	The information-literate person recognizes the need for information.	1	0.662
Q11	The information-literate person formulates questions based on information needs.	1	0.657
Q12	The information-literate person identifies potential sources of information.	1	0.674
Q13	The information-literate person develops successful search strategies.	1	0.635
Q14	The information-literate person accesses sources of information through computer-based and other technologies.	1	0.496
Q15	The information-literate person organizes information for practical applications.	1	0.616
Q16	The information-literate person integrates information found with existing knowledge.	1	0.602
Q17	The information-literate person uses information in critical thinking.	1	0.613
Q18	The information-literate person uses information in problem solving.	1	0.574
Q19	A skilled school librarian with information literacy expertise has knowledge of resources.	1	0.419
Q20	School librarians train teachers during in-house training programmes to incorporate information literacy knowledge.	1	0.546
Q21	School librarians play a leadership role in educating students on the importance of information literacy skills.	1	0.575
Q22	School librarians perform as information specialists.	1	0.671
Q23	School librarians provide reference services in school resource centre	1	0.655
Q24	School librarians view their role as supporting teachers and students.	1	0.667
Q25	School librarians view their role as providing information.	1	0.675
Q26	Define the information task (define the information needed).	1	0.595
Q27	Identify information needed (to solve the information problem).	1	0.664
Q28	Determine all possible sources of information.	1	0.631
Q29	Select the best sources of information.	1	0.629
Q30	Locate sources intellectually and physically.	1	0.646
Q31	Search for information using Booleans operators (AND, OR, NOT).	1	0.472
Q32	Search for information using the keyword search and alternative keyword search.	1	0.604
Q33	Find information within sources.	1	0.598
Q34	Extract relevant information from information sources.	1	0.689
Q35	Synthesize information found in the sources.	1	0.744
Q36	Organize information from multiple sources.	1	0.753
Q37	Present the information found.	1	0.683
Q38	Judge the effectiveness of the information found to carry out the tasks.	1	0.693
Q39	Judge the efficiency of the information process.	1	0.666



**Mean of school librarians' readiness**

Table 1 Mean of school librarians' cognitive readiness

*(n = 710)*

	<b>Items</b>	<b>Mean</b>	<b>SD</b>
Q8	Information literacy enables you to access, evaluate, and use information from a variety of sources.	4.43	0.6
Q10	The information-literate person recognizes the need for information.	4.39	0.6
Q7	Information literacy is a set of skills that can be learned.	4.38	0.6
Q9	The information-literate person recognizes accurately the information needed.	4.38	0.62
Q14	The information-literate person accesses sources of information through computer-based and other technologies.	4.32	0.66
Q12	The information-literate person identifies potential sources of information.	4.3	0.59
Q16	The information-literate person integrates information found with existing knowledge.	4.27	0.64
Q13	The information-literate person develops successful search strategies.	4.26	0.62
Q18	The information-literate person uses information in problem solving.	4.24	0.65
Q11	The information-literate person formulates questions based on information needs.	4.22	0.62
Q15	The information-literate person organizes information for practical applications.	4.22	0.64
Q17	The information-literate person uses information in critical thinking.	4.17	0.66

Table 2 Means of school librarians' functional readiness

*(n = 710)*

	<b>Items</b>	<b>Mean</b>	<b>SD</b>
Q23	School librarians provide reference services in school libraries.	4.20	0.63
Q24	School librarians view their role as supporting teachers and students.	4.19	0.59
Q25	School librarians view their role as providing information.	4.11	0.69
Q21	School librarians play a leadership role in educating students on the importance of IL skills.	4.04	0.74
Q22	School librarians perform as information specialists.	3.97	0.81
Q20	School librarians train teachers during in-house training programs to incorporate IL knowledge.	3.77	0.84

Table 5.3 Means of school librarians' technical readiness

(n =710)

	<b>Items</b>	<b>Mean</b>	<b>SD</b>
Q29	Select the best sources of information.	3.78	0.68
Q34	Extract relevant information from information source.	3.74	0.68
Q30	Locate sources intellectually and physically.	3.72	0.73
Q36	Organize information from multiple sources.	3.71	0.74
Q35	Synthesize information found in the sources.	3.71	0.72
Q37	Present the information found.	3.70	0.7
Q33	Find information within sources.	3.65	0.72
Q27	Identify information needed (to solve the information problem)	3.65	0.69
Q38	Judge the effectiveness of the information found to carry out the task.	3.63	0.74
Q28	Determine all possible sources of information.	3.60	0.70
Q26	Define the information task (define the information needed).	3.59	0.68
Q39	Judge the efficiency of the information process.	3.55	0.78
Q32	Search for information using the keyword search and alternative keyword search.	3.52	0.90
Q31	Search for information using Booleans operators (AND, OR, NOT).	3.00	1.11